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CONTENTS

	PAGE
Editorial Notes	605
Motive Power of the Future	607
Statistics as a Measure of Efficiency	608
Locomotive Limits and Fits	608
Sleepers in the Tropics	608
Signalling and Brake Power	609
British Transport Commission Traffic Receipts	609
Letters to the Editor	610
The Scrap Heap	612
Overseas Railway Affairs	613
London Transport Vehicle Repairs	616
2-8-2 Locomotive for South African 2-ft. Gauge Line	618
Post-War Development of Small-Tool Manufacture	620
Personal	623
News Section	625

DIESEL RAILWAY TRACTION

The December issue of this RAILWAY GAZETTE *publication, illustrating and describing developments in Diesel Railway Traction, will be ready on December 1, price 2s.*

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THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1

Falling Traffics and Rising Costs

THE traffic receipts to November 6 just issued by the British Transport Commission show a total decline of £7,222,000 as compared with a year ago. They bring the issue of traffic receipts to within eight weeks of the end of current year. Details are given elsewhere in this issue. *The Financial Times*, in an article dealing with the traffic receipts and the general increases in costs which have occurred since a year ago, points out that these latter must increase the loss sustained by the British Transport Commission during the current year to several times the £4·7 million recorded in respect of 1948. One item alone, the time-and-a-half payment for bus staffs on Saturdays, will cost almost £1,000,000. Whereas fares and charges on the railways are only 55 per cent. above 1939, the rise in steel costs is now 205 per cent., the rise in non-ferrous metals is 236 per cent., in timber 391 per cent., in coal 80 per cent., and for all other stores 223 per cent. These figures take no account of price advances which may have occurred since devaluation. Recent increases in the cost of petrol and fuel oil are estimated to add another £1,000,000 a year to the costs of the Commission. It seems clear that although there is an increase shown in the gross revenue from provincial and Scottish road passenger transport, the net figure may be very different.

* * * *

T.U.C. Wages Report Completed

Much consideration has been given by the special economic committee of the T.U.C. in recent months to the preparation of a wages policy acceptable to all the unions. Last weekend Mr. Arthur Deakin indicated some of the main points in the report drawn up by the committee for approval by the General Council on Wednesday last and said that a policy of "vigorous restraint" would be asked for such time as was necessary to enable the country to make an economic recovery. They could not, however, accept some of the existing wage rates, which meant that the standard of living of the lower-paid workers would have to be dealt with. Other points from his speech are given elsewhere in this issue. Support is growing among the unions for the new "wage-freeze" policy and now the steel workers have agreed to stabilise their sliding-scale agreements for 12 months on condition that others with similar agreements do the same and that a halt is called in other industries to any new general wage demands. One big stumbling block to unity, however, is that the Confederation of Shipbuilding & Engineering Unions on November 16, decided to continue with its claim for a £1 a week increase.

* * * *

British Railways Consultation Machinery

In our issue of June 24, details were given of the machinery in existence or under consideration by British Railways for negotiation and consultation between management and staff. This is one of the most comprehensive schemes of its kind in the country and it has been built up over many years. When the Railway Executive decided to put into effect a procedure of consultation last May, however, this had to be done without the support of the N.U.R., because that union maintained that the scheme embraced certain matters coming within the functions of the negotiating machinery and that "consultation" without right of decision with the management was useless. Now comes the welcome news, as reported this week on page 629, that the N.U.R. at last has decided to fall into line, joining with the A.S.L.E. & F. and the R.C.A. in helping to make the new machinery a success. In an article in *The Railway Review* of November 18, Mr. James Harrison, M.P., writes: "The agreement marks the beginning of a new era of industrial relationships . . . and renders it possible for the worker to become a responsible unit helping to make the decisions that he is expected later to carry out."

* * * *

Rhodesia Railways Pensions and Contracts

An Act of Parliament, the Rhodesia Railways Limited (Pension Schemes & Contracts) Act, 1949, which recently received the Royal Assent, has as its principal object the definition of the position relating to the pensions schemes of the Rhodesia Railways Limited and to various contracts to which that

company is a party. As previously recorded in our columns, under an Act of the Southern Rhodesia legislature entitled the Rhodesia Railways Act, 1949, a statutory body, to be known as the Rhodesia Railways, will manage and control the railways in Southern Rhodesia, Northern Rhodesia and Bechuanaland; the company known as the Rhodesia Railways Limited will cease to operate them. The broad functions of the United Kingdom Act are to provide for agreements to be entered into for a suitable continuation of pension schemes under the new organisation, and to authorise the making of an agreement between the company and the new body whereby the rights and obligations of the company by virtue of the contracts and deeds specified in the fourth schedule of the Act may be transferred to the Rhodesia Railways. The first three schedules of the Act deal with pensions, and relate, in that order, to the company's London pension scheme, and Rhodesian contributory and non-contributory schemes.

* * * *

Overseas Railway Traffics

After successive increases of £19,520 and £26,400 during the fortnight ended November 13, Antofagasta (Chili) & Bolivia traffics are now £529,230 above the aggregate figure for 1948. During the two weeks under review receipts were £72,520 and £79,460, and at November 13 total traffics for the current 45 weeks amounted to £3,031,470. Paraguay Central traffics for the fortnight ended November 11, made a G90,941 advance to G281,897 and since July 1 have improved by G820,541 to G2,735,822. Following a £2,186 increase in September, Midland of Western Australia receipts for the current 13 weeks have recovered to £81,475, as compared with £82,246 for the equivalent period last year. In October, Taltal traffics further improved to £15,870, as against £7,970, in 1948, though Dorada received a £908 setback at £31,848. On the aggregate, Taltal receipts have shown an increase of £13,340, at £45,070, since July 1 and Dorada receipts are better by £23,637, at £296,878, for the current 43 weeks. South African Railways traffics for the week ended October 29 amounted to £1,479,345 and are now £4,642,933 higher than for the corresponding 30 weeks last year, when receipts were £40,326,863.

* * * *

Station Working at its Best

So much of the unpunctuality of main-line expresses recently has been due to station delays that it is encouraging to see an organised effort being made to gain time at stops. Such a case we noticed recently on the Western Region at Snow Hill, Birmingham, when a heavily loaded 13-vehicle train from Birkenhead to Paddington, running about 10 minutes late, was got away in under 2½ min. instead of the 5 min. allowed. It was good to see how the staff were tackling the vans immediately the train came to a stand, instead of (as so often happens) looking for more lucrative jobs at compartment doors, and we wish that the zeal, which has accomplished this at Snow Hill, were exhibited at other large stations. We were forcibly reminded, too, of old days on the Midland, when, under the eagle eyes of Mr. Cecil Paget and his assistants, many of the expresses (lighter trains, admittedly, than in the case under notice) used to be got away from Derby in less than 2 min., and the 2.30 p.m. from St. Pancras to Manchester—a train to which particular care was always paid—was popularly said to hesitate, rather than stop, at the Midland headquarters.

* * * *

Increasing Small-Tool Productivity

The English Steel Corporation has undertaken an extensive development project to meet increasing demands for its small tools from home and overseas buyers; it is also intended to concentrate all departments engaged in small tool production in one large factory at its Openshaw works. The first stage was to allocate some 62,000 sq. ft. of available floor space to the manufacture of twist drills and to incorporate the latest methods of production in the new lay-out, based on its extensive experience in this type of production. The twist drill department is now in full operation and producing an average of 1,500 drills per hour. The plant consists of machine tools of the most modern design, and automatic or semi-automatic machines are employed where practicable. The project also includes the installation of a modern stock control and indenting section which indicates at a glance the stock held and the work in progress. The various types of drills manufactured in the new lay-out are arranged in three production lines, with the exception of the final operations which are common to all types. The production lines and stage inspection are operated by the central control room, centrally situated in the production lines. Ample space has been provided between the machines; the lighting, heating and ventilation is excellent throughout. Further reference to this subject is made elsewhere in this issue.

* * * *

Pennsylvania Railroad Abandons Colour Segregation

The Pennsylvania Railroad has announced that coach seats on through trains from New York to the South are now reserved on any part of the train for all passengers alike, regardless of their colour. In the past, the railway has always reserved seats for coloured passengers in any parts of those trains when they requested it, but, in the absence of such request, an effort has been made heretofore to assign coloured passengers and white passengers to seats in separate cars. This was done to save coloured passengers possible embarrassment and inconvenience south of Washington. Charges of discrimination against the railway in the sale of reserved coach accommodation to passengers travelling to points south of Washington had been lodged with the New York State Commission Against Discrimination. In negotiations with this Commission, the railway contended that it had always offered seats with identical accommodation and had never countenanced discrimination. Its practice of endeavouring to segregate passengers according to their colour had been adopted in good faith for the well-being of passengers travelling south of Washington, and this is the practice that has now been abandoned. Reference to the Jim Crow car was made in our Scrap Heap columns of November 11.

* * * *

Stainless-Steel Coach Construction

Recently the two 12-car stainless-steel trains introduced in November, 1936, by the Chicago, Burlington & Quincy Railroad on its "Denver Zephyr" service between Chicago and Denver, have been overhauled after nearly 13 years of continuous service. These trains are among the fastest in the world, making the 1,037-mile journey nightly in 16 hr. westbound and 15 hr. 35 min. eastbound, and with a weekly mileage of 7,259, each train has accumulated a total of 4½ million miles, much of it at speeds of 90 m.p.h. and over. All the cars were stripped to the frames, and in the process striking justification was found for the use of stainless steel in their construction. There was no sign of corrosion either in the frame members or in the shot-welding, both of which were found in a condition almost equal to new. The same applied to the stainless-steel tanks, whereas, by contrast, carbon steel conduits, junction boxes, filler strips and partitions were badly rusted and had to be replaced. The only damage discovered was two small cracks, each about 1 in. long, in the door sill of the combination baggage and auxiliary power car, due probably to overloading, and the sill was reinforced accordingly. As is generally known, extensive use has been made in the United States during recent years of stainless steel in the building of streamline passenger stock, and to the advantage of appearance and reduced tare weight the advantage of exceptional durability is a valuable addition.

* * * *

Travelling on the Wrong Line

From time to time instances occur, some of them very curious, in which drivers, led to start under some initial misapprehension perhaps, are routed along the wrong, or facing, line and proceed for some distance without noticing it. Fortunately, in most cases the error is discovered before anything very serious occurs, but now and then an accident arises, necessitating an official inquiry. Such an accident occurred on February 3, 1949, at Norwich, and was investigated by Lt.

Colonel D. J. McMullen, whose report is summarised in this issue. A train having to be started against the signal was sent along the wrong line, because of the signalman having forgotten to reverse a crossover, and collided head-on with a standing freight train. It is doubtful whether the driver realised the situation as early as he declared he did and very fortunate that the other train was not a passenger train, and not moving, or the results would have been far more unpleasant.

* * * *

Locomotive for a Sharply-Curved 2-ft. Gauge Line

Though the design of locomotives of any appreciable power for working on gauges as narrow at 2 ft. is a difficult problem, a considerable output can be obtained from a rigid-frame locomotive without impairing accessibility or running qualities. A recent example is a 2-8-2 tender locomotive built by the Hunslet Engine Co. Ltd. for the Eastern Provinces Cement Company of South Africa, where it will handle heavy limestone traffic over a steep and sharply-curved route. Due to the 35-lb. rails used on the 11½-mile line involved, it was necessary to limit the axleload to 6 tons 10 cwt., a low figure for a locomotive exerting over 15,000 lb. tractive effort. Normally, empty wagon trains weighing from 112 to 130 tons have to be hauled in the up direction, which involves adverse gradients of 1 in 45, and running downhill with loads up to 350 tons necessitates careful attention to braking facilities. Because of especially poor water conditions, particular care has been given to the boiler, and a large number of handholes and washout plugs has been arranged in the barrel and firebox to facilitate cleaning. In an illustrated article elsewhere in this issue, details are given of the locomotive, together with further particulars of the route over which it will work.

* * * *

Motive Power of the Future

LESS than two months ago Colonel Harold Rudgard, Chief Officer (Motive Power) of the Railway Executive, read a paper on "Some Forms of Rail Traction" before the Metropolitan Section of the Institute of Transport. Last Monday evening Sir Eustace Missenden, Chairman of the Railway Executive, took a similar subject for his paper, "Some Thoughts on Railway Motive Power" when he spoke to Members of the Institute. Sir Eustace Missenden was at pains to point out that he was putting forward his personal views on the basis of one Member of the Institute speaking to his fellows. Nevertheless, the views, personal or otherwise, of the Chairman of the Railway Executive, have an importance which cannot be overlooked. There is added interest, and probably greater significance, when the Chairman of the Railway Executive puts forward a line of thought which is so similar to that enunciated by the Chief Officer for Motive Power.

Both Sir Eustace Missenden and Colonel Rudgard envisaged ultimate main-line electrification in this country. The Chairman of the Railway Executive said that he was convinced that the economic and operating advantages and the attractiveness of electric traction were so great as, and the traffic density of a considerable portion of the system was sufficient, to render essential the early and progressive extension of electrification for main-line passenger and freight traffic as well as for interurban and suburban services. This pronouncement, even though at this point Sir Eustace Missenden again emphasised the purely personal capacity in which he was speaking, must rank as one of the most important of its kind on this subject.

He went on to say that there might be large-scale experiments with diesel traction, but that its most appropriate function seemed to be complementary to electrificaion. Diesels of relatively small type might be used on lines of lighter traffic insufficient to justify electrification, and the diesel shunter used in yards in electrified areas, so as to avoid the considerable capital expenditure needed to provide the overhead and other equipment on all tracks. "Given the necessary economic stability and reasonable financial resources, a bold electrification policy, coupled with judicious use of diesel traction, and backed by faith in our industry, can, as nothing else, bring about the rehabilitation of British Railways," Sir Eustace Missenden declared.

This policy in effect is an extension of that which was laid down for the old Southern Railway system before nationalisation. Its extension to the whole of British Railways raises entirely new principles. Earlier, Sir Eustace Missenden had said that the case for main-line electrification hinged on how far on any particular route the traffic was sufficiently dense to enable adequate advantage to be taken of the greater availability of motive power and to yield operating economies sufficient to meet the increased capital charges. He dealt at some length with the Weir Report of 1929. This showed that the average traffic density in this country was 3,000,000 trailing gross ton miles per mile of running track per annum, and that the critical figure for traffic density below which electrification in this country could not be justified on economic grounds alone was in the region of 2,300,000 trailing gross ton miles per mile of running track per annum. These figures would require re-examination at the present time but as the costs of both electric and steam operation have risen over the last twenty years they have their value as pointers. Sir Eustace Missenden said that coal for steam locomotives at the present time was costing three times what it did before the war. The Weir Committee's estimate of the capital expenditure involved in the complete electrification of British Railways was £323 million, or after allowing for various credits, a net capital expenditure of £260 million. This excluded generating plant, transmission lines and sub-stations, which the Committee thought should fall within the province of the Central Electricity Board, and would cost some £80 million.

Sir Eustace Missenden estimated that the cost at the present time would be twice or three times the Weir Committee's figure. On the other hand, changed conditions on branch lines and the development of diesel traction have rendered the need for complete electrification more remote. The work of electrification was bound to be spread over some years and prices might fall. He believed that, on balance, once our immediate economic difficulties were over, and capital investment was less restricted, conditions would be no less favourable for electrification, both main line and suburban, than before the war. In certain respects they would be much more so.

There can be little doubt that the great increase in cost of coal, coupled with the difficulty in obtaining good quality solid fuel, has reopened the whole question of main-line electrification. There is another factor which may well have played its part. In 1929, a capital expenditure of £323 million by the railways put the proposal out of court for all practical purposes. The astronomic figures of finance involved in various undertakings sponsored by the Government or by State-owned enterprises, have made less intimidating a figure even three times as great at the present time. Moreover, should a depression assail the country there can be no doubt that the railways would be called on to undertake great capital works in an effort to afford employment. There are many projects which would involve heavy cost and large calls on employment which the railways could undertake and from which they would benefit, but there is none which would have so wide an appeal to the public or which would make such immediate demands on men and material as main-line electrification.

At the same time, a great deal of data will have to be considered before any estimate can be made as to the economic justification for main-line electrification in this country. Sir Eustace Missenden has had striking evidence of the success of the old Southern Railway electrification policy, but conditions on that system are very different from those on the other railways. There, with its intensive suburban traffic and its extension and growth of dormitory towns, electrification has paid good dividends. Would electrification of the main line to Manchester or Glasgow create any new traffic? If it did not, the capital costs would have to be carried by the present passenger receipts; that would be a very different story from the Brighton or even the Portsmouth electrification.

Sir Eustace Missenden dealt at some length with the research and experiment which is taking place in the development of steam, electric, diesel, and gas turbine traction. The Railway Executive is pressing forward with several projects which were largely initiated by the former companies and which include five "Leader" class 0-6-6-0 steam locomotives, costing about £20,000 each; five single-unit main-line diesel electric locomotives costing some £70,000-£80,000 each; the "Fell" 1,600-h.p. diesel-mechanical 4-8-4 main-line locomotive, costing about

£60,000; and two gas-turbine locomotives costing £75,000-£100,000 each.

In assessing the probable public requirements and operating trends during the next 30 years he suggested that schemes for the co-ordination of the different forms of transport and the creation of a properly integrated system of inland transport with an overhauled charges system, were bound to have a marked influence in railway operating and motive power policy. The next few years were likely to see the closing for passenger and/or freight traffic of an increased number of unremunerative lines as well as of smaller intermediate stations on main lines. There may be a return to rail of some of the longer distance passenger and freight traffic giving a concentration of effort and railway resources on main lines.

As soon as circumstances permit, he promised the resumption of the pre-war policy of the acceleration of passenger services. Services would be more frequent and based to a much greater extent on the time-interval principle. The value of time-interval services, he stressed, was such that the railways could not wait for electrification or dieselisation to develop them. He also said that "many trains will be lighter, owing to shorter formations, consequent on the increased frequency, and to a reduction in weight of the vehicles, the outcome of new forms of construction." In other words, shorter trains and more of them.

* * * *

Statistics as a Measure of Efficiency

DURING the past 50 years there has been a marked advance in the use of statistics for many purposes. About 1900 few railway managers saw any advantage in compiling ton-mile statistics as a means of judging traffic operations. As often happens, the minority proved to be right, and on its formation the Ministry of Transport settled once for all the place of statistics as a check on what the railways were doing. Now the British Transport Commission issues periodically in *Transport Statistics* a great deal of detailed information about rail, road, and water carriage. In a paper read to the British Railways (Western Region) London Lecture & Debating Society on November 17, Mr. Basil Smallpeice, Director of Costs & Statistics, British Transport Commission, discussed the use of these statistics as a measure of overall efficiency in transport. His purpose was not to describe the significance of individual statistics, as that had been done in text books—"notably in Mossop as regards the railways, a book which is almost as fresh and relevant today as when it was first written nearly 40 years ago."

Examining, first, output per man per day, he concluded that it was roughly the same on the railways in 1938 and 1948. On analysing certain statistics in detail, however, it appeared that there was actually a decline in the amount of service offered to the public for each railway servant employed. Information about road haulage was so meagre that a similar comparison could not be drawn, but figures were quoted to show that road passenger transport had developed in a marked degree during the last ten or fifteen years, both in London and the provinces. Considerably more passenger-miles per employee per day were now worked by road passenger transport than the railways handled. The load factor on the railways was relatively low compared with London buses and coaches and still lower compared with Scottish bus services.

Mr. Smallpeice's main point was that the overall statistics, which he had selected, could have a real value in measuring relative overall efficiency. He rounded off his remarks by throwing out a suggestion about statistical targets. At the moment, he said, we tended to regard statistics as a kind of reporting after the event. Instead, we might aim at a long-term increase in productivity of, say, 3 per cent. each year, and targets could be set accordingly for every department or section so that its head would know what improvement he was expected to effect. In this way a sense of purpose and direction would be imparted to the management of affairs. Mr. Smallpeice is to be congratulated on his effort to vitalise statistics, and to show how they might be applied in ways outside the normal practice of transport organisations. He cannot have failed to set a few of his hearers thinking on novel lines about the scope of statistical methods.

Locomotive Limits and Fits

IN his paper entitled "Locomotive Limits and Fits" which he delivered before the Institution of Locomotive Engineers on Wednesday, November 23, Mr. J. F. Alcock, Member of Council of the Institution, dealt with the subject of standardisation of limits and fits as applied to the manufacture of locomotives in this country. The benefits to be derived from such a policy are obvious, as not only does this policy affect the manufacture of locomotives, but it will have a far-reaching effect on the repair and maintenance of the locomotive, and in this respect can be regarded as a recurring benefit when one considers the replacement of locomotive details during its thirty years' life. This affects not only the central repair shops of railways, but will be of benefit to running sheds to an even greater degree, since the depots are a considerable distance from headquarters, on which they indent for their stocks. Neither are running sheds equipped with machine tools to any extent; consequently the file in many instances often of necessity takes the place of the surface grinder. Many overseas railways indent on manufacturers in this country for replacements, due partly to their inability to replace machine tools, heavily overworked during the recent conflict, and the benefits of standardisation in this respect cannot be overestimated.

Locomotive availability figures should improve eventually, with the issue to the manufacturing shops of dimensional drawings showing the *plus* and *minus* tolerances. Mr. Alcock, during the course of his paper, gave some typical examples of what can result from the use of haphazard methods, which not only reduce the potential life of various parts of the locomotive, but when carried to the extreme can become a positive danger, when one considers the stresses to which locomotives are subjected; he pointed out that only thirty years ago, limits and fits as applied to locomotive manufacture were very much a matter of shop practice, each works keeping its own practice very much to itself and few, if any, committing their experience and knowledge to paper; the majority depended entirely on the fact that their personnel knew exactly what was required. What should have been realised is that personnel often, for various reasons, seek other employment, and that, in certain instances, shop practice could become a matter of trial and error. Mr. Alcock was a member of a committee set up in 1943 by the locomotive manufacturers in this country, and the fact that it was possible to arrive at mutual recommendation showed that the manufacturers realised the necessity of standardisation. Reference to this subject was made in our August 20, 1948, issue.

* * * *

Sleepers in the Tropics

IN an article entitled "The Service Life of Sleepers in the Malayan Railway," published in the July, 1949, issue of *The Malayan Forester*, Mr. A. V. Thomas states that in 1941 there were about 2,900,000 6 ft. 6 in. × 10 in. × 5 in. sleepers laid in the 1,332 track-miles of the metre-gauge Malayan railway system. They were mostly of local primary hardwoods and the 80-lb. and 60-lb. F.B. rails were spiked directly to them. During the nine years immediately preceding the war, annual spot renewals averaged 8·6 per cent. in the main lines, and 6·9 per cent. in all tracks. The average serviceable life of a sleeper was thus 12 years in the main lines and 13½ years throughout the system.

Mr. Thomas gives four reasons for these comparatively low figures: (1) the high humidity and rainfall in Malaya, producing ideal conditions for fungal infection; (2) the continually alternating wetting and drying of the surface of the sleepers, due to heavy rainstorms followed by high sun temperatures; (3) the prevalence of termites; and (4) the abnormally heavy axle loads and high speeds for metre gauge, namely, 16 tons and 45 m.p.h. As a result, bad surface weathering occurred, followed by fungal infection, causing rot to spread from the spike holes. The necessity for frequent respiking added to the deterioration of the sleepers, and where there was a tendency towards dirty ballast, termite attack hastened failure.

Until 1941, experimental lengths of various kinds of sleeper, some treated and others untreated, were inspected annually, but inspections were not possible during the Japanese occupation, and were resumed only in 1947. The standard of track maintenance naturally deteriorated during the occupation, and

some of the estimates made previously of the life of sleepers were consequently affected. Nevertheless, the data obtained from the pre-war tests pointed to extended use of treated secondary hardwood. This view was strengthened by a realisation that primary hardwoods available would meet only a fraction of the post-war demands, and that treated sleepers would be not only cheaper but also probably longer-lived. As a result, a large pressure-treating plant was ordered in 1944.

The tests had included a variety of secondary hardwood sleepers treated (a) under pressure (1) with a mixture of equal parts of creosote and diesel fuel by both the Rueping and Lowry processes and (2) with water soluble salts by the latter process; and (b) by the open-tank process using the same creosote mixture. A comprehensive range of comparative tests were thus possible in the road. As compared with the life of various primary hardwood untreated sleepers, which—with the exception of teak—varied from 11 to 17 years according to the species used, and averaged only about 12 years in the main line, the following results were obtained with treated sleepers. A variety of creosote pressure-treated secondary hardwood species lasted so well as to lead to expectation of a life of at least 20 years. Even those treated by the open-tank method were expected to have a serviceable life of from 16 to 18 years. On the other hand, the sleepers impregnated with water soluble salts were found to weather more rapidly and severely, and were even less durable than those treated with the creosote-diesel mixture by the open-tank process. Certain species, however, which were first treated with water soluble salts and subsequently also with 25 per cent. creosote and 75 per cent. diesel fuel, have now been in the main line for nearly 20 years, and rejections to date are about 30 per cent.

Though these tests involved only primary and secondary hardwoods and included no treated softwoods, they were sufficiently comprehensive to be instructive, and indicated the behaviour of both local and some other timbers under tropical conditions. It is noteworthy that the secondary hardwood sleepers absorbed from 4 to 7·4 lb. of the creosote-diesel mixture, in various proportions per cu. ft., under pressure.

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Signalling and Brake Power

THE problem of the correct relationship between signalling and brake power is one to which general reference has often been made, but which has not, perhaps, always received the scientific attention it merits. Considerable interest, therefore, in a paper on the subject, read recently by Mr. O. S. Nock before the Institution of Railway Signal Engineers, was expressed by members both of that Institution and of the Institution of Locomotive Engineers, who had been invited to attend. One of the main difficulties in this country is the disparity of braking power as between different classes of train. Mr. Nock gave some informative details concerning the effects of speed restrictions imposed for temporary or local reasons, and proposed that the question should be approached more scientifically, with a view to mitigating their hampering consequences.

When certain very high-speed trains were introduced before the recent war the long stopping distances required made it essential to adopt special block signalling regulations, to provide an adequate overlap, the traditional 440 yards being insufficient. Either it was made certain that "train out of section" had been received from the signal box in advance before a train was allowed to be accepted, or certain signal boxes at given intervals were provided with distant signals at full braking distance for these trains, and no such box could receive "line clear" for one of them unless all sections up to the next box so equipped were known to be clear. The extra high-speed train, therefore, could not, except in an unexpected emergency, find an adverse distant signal at less than braking distance from the home signal.

On other routes, we believe, special "banner" repeaters of the distant signals were installed for use with high-speed trains, to give the effect of placing them further out, while leaving them at the shorter distance suited to other classes of traffic. Elsewhere, alterations were made to the aspects displayed by the colour-light signals to give these trains longer warning of the necessity of stopping and avoid special speed restrictions being applied to them. Such long warnings, however, are apt to be observed unnecessarily by drivers of slower trains and thus bring some disadvantages.

We support the view expressed by Mr. W. Cyril Williams, President of the Institution of Locomotive Engineers, before the reading of Mr. Nock's paper, that such joint meetings might be held more often with advantage to locomotive and signal engineers alike, and think it a pity that the views of operating men are not more in evidence in the discussions which usually follow papers of this kind.

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British Transport Commission Traffic Receipts

THE latest return of traffic receipts by the British Transport Commission shows another heavy decline—the largest this year. For the four weeks to November 6, as compared with the similar period of 1948, total gross traffic takings were down by £1,674,000. Of this amount, £1,477,000 was the result of smaller receipts from the operations of British Railways. There was a decline of £178,000 on the operations of London Transport and of £18,000 on those of road passenger transport in the provinces and Scotland. Inland Waterways contributed £1,000 to the overall decline.

On British Railways the greatest falling off in traffic revenue was shown by passenger receipts, which registered a loss of £679,000. Merchandise and livestock were lower by £528,000 and there were decreases of £155,000 in coal and coke revenue, and of £113,000 in receipts from the movement of minerals. The following table gives details of the traffic receipts for the four weeks to November 6 compared with the similar period a year ago, and also the aggregate takings for the 44 weeks of this year compared with the like period of 1948.

—	Four weeks to November 6		Incr. or decr.	Aggregate to November 6		Incr. or decr.
	1949	1948		1949	1948	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers	7,250	7,929	— 679	99,400	107,075	— 7,675
Parcels, etc., by passenger train	2,272	2,274	— 2	24,485	24,767	— 282
Merchandise & livestock	6,399	6,927	— 528	69,094	71,369	— 2,275
Minerals	2,385	2,498	— 113	24,855	24,201	+ 654
Coal & coke	5,441	5,596	— 155	57,199	55,099	+ 2,100
	23,747	25,224	— 1,477	275,033	282,511	— 7,478
Road Passenger Transport, Provincial and Scottish—						
Buses, coaches & trolleybuses	2,471	2,489	— 18	30,527	29,834	+ 693
London Transport—						
Railways	1,097	1,141	— 44	12,127	12,308	— 181
Buses & coaches ...	2,364	2,457	— 93	26,706	26,860	— 154
Trolleybuses & trams ...	839	880	— 41	9,280	9,533	— 253
	4,300	4,478	— 178	48,113	48,701	— 588
Inland Waterways—						
Tolls	55	57	— 2	574	586	— 12
Freight charges, etc. ...	59	58	+ 1	717	554	+ 163
	114	115	— 1	1,291	1,140	+ 151
Total	30,632	32,306	— 1,674	354,964	362,186	— 7,222

The receipts so far returned for the current year show a total loss of no less than £7,222,000. The decline in British Railways gross revenue so far is £7,478,000, and with only two more four-weekly periods to complete the year's traffics, it is clear that the British Transport Commission's deficit for the current year must be considerably greater than the £4·7 millions of 1948. Passenger revenue on British Railways alone is down by £7,675,000, and merchandise and livestock has declined by £2,275,000. Coal and coke revenue on balance is higher by £2,100,000, and there has also been a small improvement from minerals of £654,000. Passenger train parcels have brought in £282,000 less.

London Transport receipts so far this year show a decline of £588,000, but this has been offset in gross revenue by takings on road passenger transport outside the London area, where there has been a rise of £693,000. Inland Waterways show an improvement of £151,000.

The foregoing figures of traffic receipts are all gross and no allowance is made in them for the increase in expenses. Some reference to this factor is made on page 605.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Long-Distance Passenger Patronage

"Staniland," Radwell,
nr. Felmersham, Beds. November 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of November 4, I have read with considerable interest Mr. R. E. Charlewood's letter, in which he once more quotes the very inferior services offered by the old Midland main line from St. Pancras. From his remarks in the last paragraph he perhaps has in mind some of my previous letters to you on the same subject.

Apart from the absence of the midday train from St. Pancras to Manchester, except on Saturdays, the up service leaves much to be desired in the morning. After the 9.0 a.m. from Manchester Central, there is nothing until the 1.50 p.m., except the 11.35 a.m. on Saturdays only.

In addition to this deplorable fact, the 4.15 p.m. from the Central now leaves at 4.5 p.m. and makes two additional stops before reaching Derby. Does one assume that this is the improved service promised by sections of the lay press earlier in the year?

Yours faithfully,
H. W. FRANKLIN

New Western Region "1500" Class 0-6-0

84, Park Road,
Birstall, Leicester. November 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I noticed in your issue of November 4 that Mr. W. Evetts welcomed the new Western Region "1500" tank engines because they were fitted with Walschaerts valve gear. The reason, however, for the improved availability of this class is that the valve gear, of whatever design, is hung on the outside.

There still seems to be no certain proof of the superiority of the Walschaerts gear for steam distribution. Though ex-G.W. four-cylinder locomotives have always been fitted with internal Walschaerts gear, the sole reason would seem to be that only one eccentric is needed, instead of two for the Stephenson gear, leaving more room for big-end bearing surfaces. The Stephenson gear has been retained for the two-cylinder locomotives, even the quite recent "1000" class.

The whole issue might be made clearer if the comparative performances of the Walschaerts- and Stephenson-fitted Class 5s on the London Midland Region are made known.

Yours faithfully,
D. C. CARTWRIGHT

Electric Rolling Stock Nomenclature

5, Dukes Avenue,
Edgware. November 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Use of the phrase "trailer motor coaches" in the description in your September 30 issue of Eastern Region rolling stock on the Shenfield line seems to have been made in good faith, based on an official statement, as the phrase is also used in your contemporaries. It is to you I write of this, however, your columns being the accepted platform for raising matters of railway interest.

Years ago, on electric railways, there were motor coaches, containing motors, and trailer coaches, pulled and pushed by motor coaches. At an early date certain trailer coaches were fitted with driving cabs from which, by remote control, the motor coaches could be operated, so that trains with but one motor coach could be used. These coaches were then designated control trailers. The phrase "driving trailer" has of late years been used for "control trailer," and its meaning is a little less obvious, but by now well understood.

In Britain, London Transport introduced in 1938 tube trains in which some motor coaches were not fitted with driving cabs, being thus of necessity operated by remote control. These were called "non-driving motor coaches," a description which might have implied that their motors were inoperative, but which, when understood, fairly clearly implied a motor coach lacking a driving cab. The "driving trailer," a trailer with a driving cab, seemed logically the converse of this in description and function.

The published list of weights of Shenfield stock refers to motor coaches, trailer coaches, and driving trailer coaches, which accords with current nomenclature.

It has been suggested that "trailer motor coach" could mean a motor coach without collector gear, incapable of operation alone; if this were so, such a paradoxical combination of adjectives might be justified, but the description "driving trailer" would not, according to current usage, be synonymous therewith. For any such agreement the connotation of "driving" would have to be changed, necessitating reversion to the older "control trailer" for what is now generally called "driving trailer."

May I appeal for consistency in nomenclature of electric rolling stock on the lines of present-day usage?

Yours faithfully,
B. JOHN PRIGMORE

Railway Passenger Fares and Train Services

Northwood,
Middlesex. October 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I think that Mr. Charlewood, in his letter in your October 21 issue, has overlooked the fact that in the early days of railways in England the principle of a fare varying according to the speed and type of accommodation was generally adopted, though for some reason it was later given up. *Bradshaw's Guide* of August, 1845, gives several tables of fares:—

Northern & Eastern Railway. Higher fares for the "quick train" (Shoreditch-Ely-Norwich).

G.W. and Bristol & Exeter Railways. Higher fares by "express train."

London & Birmingham Railway. Varying fares for express, mixed fast, and mixed stopping trains.

London & South Western Railway. Varying fares, London-Southampton-Gosport, for express and fast trains; mixed trains; "reduced fares trains" (7 and 9 a.m.); slow trains.

London & Brighton Railway. Fares vary as trains take, between London and Brighton, 1¼ hr., 2 hr., or 2½ hr. "Parliamentary."

Manchester & Leeds Railway. First, second, third class, with a fourth class at one penny per mile.

Yours faithfully,
REGINALD B. FELLOWS

Railway Passenger Fares

Rustington,
Sussex. October 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In his letter of September 21 (your September 30 issue) Mr. Dyckhoff infers that the statement contained in paragraphs 111 and 172, respectively, of the B.T.C. Report for 1948 are inconsistent, but is there really any inconsistency? The statement in the former paragraph that the average length of journey showed little change (1948 and 1947) was one of fact; that in paragraph 172 was simply in explanation of the *general* decrease in rail passenger journeys, partly, be it noted, attributable to the disparity between rail and road fares.

Mr. Dyckhoff takes exception to the use of passenger miles in comparing the passenger carryings by the railways in 1948 with those in 1938; he suggests that very few people understand passenger miles and apparently considers passenger journeys are a better measure of the work done. It is true the number of passenger journeys, 1948 *v.* 1938, decreased very considerably—I make the figure 134,000,000 for passengers other than workmen and season ticket holders—but as the falling off was mainly in short-distance traffic, with an increase in long-distance traffic, the passenger miles (*i.e.*, total distance passengers were carried) increased by some 2,000,000, and surely this is the correct reflection of work actually performed.

Mr. Dyckhoff asserts dogmatically that "beyond any question whatever" the fall in rail passenger traffic and receipts would have been even greater if cheap tickets had not been introduced. I could equally dogmatically, and with more justification, assert the contrary, but prefer to repeat that no one can say with certainty what the results would have been had there been no extension of "cheap" facilities this year; consequently, this interesting point of difference will have to remain in dispute. By the end of the year, however, the figures then available may be so satisfactory as to convince me I am wrong—I hope they will.

Mr. E. R. B. Roberts, that indefatigable writer to the Press, on the shortcomings, real and imaginary, of British Railways, must have mis-read my last article, as I certainly did *not* admit that he was correct in stating ordinary fares were reduced in the early 1930s. In his letters of February 7 and July 12 he stated the "standard" fares were reduced to 1d. a mile for single and return followed by a further reduction

of the return fares to ¼d. a mile; I simply pointed out that there had been *no* reduction of the standard fares. The cheap return "Summer Tickets" (subsequently monthly returns) which admittedly virtually superseded the standard return fares for distances over 15 miles (30 on the Southern) were introduced in May, 1933 (not 1932), after the lowest point of the economic depression had been passed. The steady but moderate increases up to 1937 followed the usual pattern—traffics always fell in times of economic depression and rose again when things started to improve—and were not necessarily due at all to the introduction of the "cheap" return fares.

I note Mr. Roberts backs the opinion of the Parliamentary Secretary to the Minister of Transport. I prefer that of the Minister himself.

Without being in a position to confirm or disprove Mr. Roberts' statement that our charges are "upwards of 100 per cent. higher than abroad," I contend this has no bearing on the Commission's problem, which is how to make transport in this country self-supporting in total.

Finally, Mr. Roberts may be interested to learn that if his suggested rate of 1d. a mile single and 1½d. (¾d. each way) return—approximate average (assuming 90 per cent. of the total journeys were return) 0·66d. per mile—were adopted, it would be necessary, even to *maintain* existing passenger revenue, for British Railways to increase their passenger miles (excluding workmen and season tickets) by 147 per cent., *i.e.*, from 15,248,000,000 to 37,663,000,000, or, if he prefers passenger journeys, from 471,000,000 to 1,163,000,000 (average distance per journey about 32½ miles in each case). This is on the assumption there would be no cheap fares for Services travel, staff privilege tickets, etc., and that existing workmen's fares and season ticket rates were maintained, which, of course, they could not be, the rate of 0·66d. per mile being less than the existing average rate per mile for both workmen's and season ticket journeys. These figures should, I think, convince even Mr. Roberts of the fantastic nature of his proposals, having regard to the present level of wages and costs.

Yours faithfully,
J. H. LAUNDY

Pulsating Smokeboxes

390, Wakefield Road,
Huddersfield. October 28

To the Editor of The Railway Gazette

Sir,—As Mr. Woodhouse says in your October 28 issue, apparent pulsation of a smokebox may be an optical illusion. Incredible though it may seem, I have sometimes looked "down the railway track on a hot day" and have seen many queer things, but never an image dancing in unison with exhaust beats except on the smokebox of a Southern Region "West Country." A mirage of that accurately rhythmic nature seems even more worthy of note than a real pulsation and its possibility enjoins caution in reporting observations.

Excessive "blowing-off" cannot always be dismissed as the fault of the safety valves. I have seen a train enter a station, 10 minutes before it was due to leave, with boiler pressure at 260 lb. per sq. in. and the blower working hard, with the result that the safety valves (fortunately not defective) blew off at 280 lb. per sq. in. for five minutes continuously. Unless I was misled by an aural illusion, the noise was considerable, and was accompanied by what may have been a mirage, but looked like a cloud of steam.

Yours faithfully,
W. A. TUPLIN

Railway Standards

Montreal, Canada. October 15

To the Editor of The Railway Gazette

Sir,—The letter from Mr. Ronald Shephard on the subject of railway standards, which appeared in your August 19 issue, prompts me to add a further piece to his theme as illustrated by the bank clerk who became an Army engine driver.

A young officer with a very keen interest in railways, who served throughout the recent war in the Royal Corps of Signals, succeeded soon after the end of hostilities in obtaining a transfer to the Railway Transportation Headquarters of the British Army of Occupation in Austria. Here, he applied himself with great energy to the task of familiarising himself with the railway operating problems, both military and civil, with which this Headquarters was concerned, and at the end of two years had gained a very considerable experience of railway working. He then applied for a position with British Railways, but was turned down, presumably through lack of "influence," with the result that another keen railwayman is lost to the railways.

When will the Railway Executive realise that enthusiasm for railways in a young man, when this enthusiasm is coupled with outstanding ability as in the case cited, probably more than offsets the fact that he has not "come up from the ranks" on one of the former main-line railways, or merely followed in his father's footsteps?

There should be far more openings than there are in British Railways for "new blood," so that more young men with their heart and soul in railways may become useful railwaymen instead of frustrated bank clerks.

Yours faithfully,
W. E. BURKE

British Railways Public Relations

70, Grange Gardens,
Pinner. November 13

To the Editor of The Railway Gazette

Sir,—In your issue of November 11 you quote a letter from Sir Eustace Missenden stating that "the service to the public is improving" and that the statistics are given "officially or by press announcement" to the public.

Now on the 7th of this month three great changes took place in Eastern Region services. Two of these were noted in your columns on November 4—I refer to the Eastern Region electric services improvements and the cut in Anglo-Scottish times due to the removal of temporary speed restrictions—and one assumes the details were supplied by British Railways. At the same time, however, decelerations have been instituted on the G.C. line and even the "Master Cutler" and "South Yorkshireman" have had between nine and 19 min. added to their times. There has been no public announcement of this at all.

This is typical of British Railways public relations policy. Every slight improvement is proudly announced and all retrenchments are ignored.

To read the official statements which accompany every new timetable issue one would imagine there is continuous improvement going on, whereas the reverse is true. The service on the London Midland Region in particular is worse in every way than in 1946.

To give a further example, when the up Perth day train was slowed by 25 min. this summer no mention was made of the fact. When the schedule was restored in the winter it was proclaimed as an "acceleration."

Yours faithfully,
D. J. O. FERRY

Future of the Rural Branch Line

Ormiston Hotel, Oak Lane,
Sevenoaks, Kent. October 29

To the Editor of The Railway Gazette

Sir,—I ask your help. There is one such line, an important link between the busy towns of North Kent and the Sussex Coast around Brighton and Worthing, and, double tracked, could and should attract good traffics. But my experience of yesterday, October 28, will help to show why British Railways are losing traffic.

I left Tonbridge Junction by the 9.55 a.m. through Brighton train in a corridor four-coach set. As arranged in the timetables (!) we sat for 18 minutes at Tunbridge Wells West. Our engine was an ancient Brighton 0-4-4 tank in so sorry a condition that it could barely struggle up the banks to Crowborough and Falmer, and had no steam to spare for heating the train, so that on this bitterly cold frosty morning we were almost frozen. Eventually we struggled into Brighton a quarter-of-an-hour late through engine fault alone, having taken nearly two hours for about 38 miles.

I returned by the 4.36 *ex*-Brighton, as usual a two-coach push-and-pull set without any lavatory for the 70-min. journey in this cold weather, to Tunbridge Wells West, where I had to change for Tonbridge. The two-coach set is too small for the crowds of workmen in filthy overalls who often overflow into the two first-class compartments. Because of lack of proper train connections from and to Sevenoaks I am always forced to have taxis at a cost of 11s. in both directions, as I cannot spare the time for the buses. There could and should be a heavy business and pleasure traffic between the busy ends of this double-track line, but the present mismanagement is simply driving away would-be passengers.

Why in the new map of the whole of British Railways that has replaced the much clearer one of Southern Region lines in the new timebooks is the hilly single line, little used, between Eridge and Polegate, shown as a main line to Eastbourne, whereas the direct Tunbridge Wells-Lewes double line is shown just as a jumble of thin connections?

Yours faithfully,
E. A. GURNEY-SMITH

The Scrap Heap

Of the 1,240 members of British Railways, Scottish Region, staff eligible for awards in the 1948 Safe Driving Competition promoted by the Royal Society for the Prevention of Accidents, 610 carters and 555 road-motor drivers have gained awards. Among the awards made by the Society to the railway staff in Scotland are 959 diplomas, 12 silver medals, 22 gold medals, and 66 oak leaf bars.

* * *

100 YEARS AGO

From THE RAILWAY TIMES, *Nov.* 24, 1849

CAUTION TO RAILWAY COMPANIES.—On Sunday night some thieves took advantage of the darkness to steal about 50 of the brass handles from the carriages on the line of the London and North-Western Company, at the station near Birmingham.

* * *

"A FOOLISH MAN"

A railway porter was awarded damages against a man aged 65 years at Reading County Court on November 16 for injury caused by a collision when the passenger was trying to board a moving train.

It was said that the railwayman did what any sensible porter would have done "to save this foolish man from his own act and to see that he did not endanger other people." In attempting to board a moving train, "an attempt we have probably all made in our day," said the judge, the passenger was doing a dangerous thing.—*From the "News Chronicle."*

* * *

TRAIN STOPS FOR LOST FALSE TEETH

Canadian newspapers report that the driver of a passenger train which was travelling from Owen Sound to London (Ontario) brought his train to a sudden halt and put it into reverse for some distance. Startled passengers rushed out to see what had happened, and were informed that the driver had lost his false teeth when he had unexpectedly sneezed.

At the approximate point of the sneeze passengers and train crew started a search on the side of the track for the missing teeth, which were eventually found by a passenger. The driver washed some bits of grass and cinders from the teeth before slipping them into his mouth, and then gave two toots on the whistle to signify the resumption of the journey.—*From "The Times."*

* * *

FISHING FOR TRAFFIC

Five weekend conferences of a novel kind were organised by the Baltimore & Ohio Railroad for its sales representatives last summer. The theme was "Fishing for Traffic," and all the necessary illustrations were ready to hand from the art of the angler. It was pointed out that fine tackle is worthless unless the fisherman knows how to use it, and that big fish are caught with small bait; so potential passengers often are influenced by small things. When a fish strikes, it must be played and landed without delay; so the passenger, once caught, must be kept satisfied and interested by his "travel adviser" until he is "landed" as a permanent customer.

Long lines may be needed; not all fish are caught near the boat. Sharp, shiny hooks catch the most fish, just as a sharp and shining sales technique catches the passengers. To drive the lesson home, each batch of representatives was afterwards taken on a chartered fishing cruise on the blue waters of Chesapeake Bay, with a prize of a Stetson hat for the one who landed the largest edible fish. The informality of these conferences made a great impression on all who participated in them.

* * *

THE DOUBLE-DECK COACH

I note from *The Railway Gazette* that Mr. O. V. Bulleid, C.I.E.'s Guest Conductor, was up to some extraordinary antics before he wisely fled from Britain. He designed a terrible monstrosity for British Railways. You remember my description of my own old Chief Engineer, who thought a Garratt was the upper apartment of a lofty building and not an articulated loco. I will not go so far as to say that Bulleid never heard of the Garratt but he *has* had the extraordinary brainwave that there is no reason why garrets should be confined to houses. The poorer classes live in attics, he seems to reason—why then should they not travel in attics? His prodigy has been to design a "double-deck four-coach train." Externally, the appearance of this train resembles the perforated roll of a player-piano. Certain slaves can be seen peering from the tiny and unopenable windows of the second storey. . . .

Mr. Bulleid might now consider designing a sleeperless road. He could then have not only attics on his new trains but also cellars. Naval men on leave could rise from their seats in the main coach when bored, stretch themselves, and say they thought it was time to "go below." And what about a second storey on locomotive cabs for resting and making tea?—*Myles na gCopaleen in "The Irish Times."*

* * *

Nostalgia

You loved them too: those locos motley gay
That once seemed permanent as their own way?—
The Midland "lake," the Caledonia blue;
The Brighton "Stroudleys" in their umber hue;
North Western "Jumbos," shimmeringly black,
That sped, shrill-whistled, on their "Premier" track;
And all a forest's tints of green—G.C., G.N., G.W., L.T.S., H.B.,
South Western, Highland, "Chatham": many more
Both in our own and on the Emerald shore?
Did you, beneath a sooty Oldham sky,
Think dour the "Aspinalls" of L. and Y.,
Or, in the gloom of the Five Towns, admire
The cheerful, sturdy, red North Staffordshire?
Do you remember how the Suffolk sun
Gleamed on a blue Great Eastern "Hamilton"?
In Wessex did you keep slow company
With the "tanks" (royal) of the S. and D.,
That waited, as it seemed, for crack of doom
(While they performed strange rites) at Templecombe?
Across the Fens and Broadland did you reach,
And come—in course of time—to Cromer (Beach)
Behind a khaki M. and G.N.J.,
And was the "pea soup" to your liking—say!—
Of the N.B. that took us over Forth
On our first wizard journey Further North?
The Johnson "singles," Drummond 4-4-0's!
Were ever engines lovelier than those?
What treasured names they bore—*Sir Francis Drake,*
Swallow, Lysander, Lady of the Lake,
Courier, Gladstone, Glowworm, Lorna Doone,
Titan, Apollo, Jeanie Deans, Typhoeus...
And in their wake what rainbow splendour ran:
The bronze-green coaches of the Cambrian;
G.N.S. red and white; North Eastern "plum";
"Salmon" that struck one young observer dumb
At grim old Waterloo; the varnished teak
That, North or South, was never far to seek,
But had for apogee East Coast Joint Stock
That left Kings Cross each morning, ten o'clock—
Though many held this did not equal quite
The West Coast purple-brown and (spilt-milk) white.

Those Furness trains—red, white, and blue—at Grange?
That "orange" touch at Manchester (Exchange);
At Central the dark oak of Cheshire Lines?
Or—what the memory most of all enshrines:
The crown and consummation of our dreams!—
Those great "joint" hubs where many colour-schemes
Converged to hold us under such a spell:
York, Cambridge, Perth, or Carlisle (Citadel)? . . .
The high "bird-cages" of L.C. and D.?
Those dismal Broad Street arks one used to see
Above one ere (in hardly prouder state!)
One trundled up the bank at Bishopsgate? . . .
Those little Emett lines which "also ran,"
Saucily mocking at the march of man—
Festiniog, Southwold, Wantage, Isle of Wight,
Lynton and Barnstaple, East Suffolk Light? . . .
Yes, I remember! But I will not flog
My muse to furnish the whole catalogue.

"Each to his choice." Although my youth was bred
Amid the comfortable Midland red,
And though for long, wherever I might roam,
M.R. to me spelled certitude and home,
Yet all my exiled Western blood took fire
When—a small boy, in snowy-starched attire—
I first changed trains at Bristol (Temple Meads).
Awhile my tastes were fickle; but the seeds
Sown there have proved the stubbornest by far:
Upon my heart is graved G.W.R.
And when I came to live near Brunel's wall,
Between the red cliffs and the rise and fall
Of Devon waves, I thought long years to see,
In ever-more-familiar livery,
The "Dutchman" or the "Limited" swing by,
Washed by the Channel spray.
Hope born to die!

[Reproduced by permission of the proprietors of "Punch."

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Train Plunges into River

Fifty-four Africans and one European are reported to have been killed, and 100 Africans injured, most of them seriously, when a train conveying 500 passengers plunged into a flooded river from a 50-ft. bridge near Waterval Boven, Transvaal.

The train, double-headed, was travelling from Booysens, Johannesburg, to Portuguese East Africa with African mine-workers returning home after completing contracts with Witwatersrand mines. The driver of the leading engine was killed, the other driver was injured, and both firemen were seriously injured.

Some passengers were trapped in the seven coaches on the river bed and many were drowned. Many passengers were killed when they fell from a coach left hanging over the bridge.

Three Dakotas of the South African Air Force worked an ambulance shuttle service between Pretoria and the scene.

RHODESIA

Timetable Changes

The passenger service between Cape Town and Rhodesia and the whole of the train service within the Colony has had to be revised consequent on a change in the schedule of mail boats carrying Rhodesian passengers, which will arrive at Cape Town on Thursdays instead of Fridays, as from November 28.

Colliery Expansion

Additional equipment, involving a capital expenditure of over £2,000,000 is being installed at Wankie Colliery, with the object of developing capacity in line with the railway expansion. In 1947 the railways moved 126,000 tons of coal a month, in 1948, 144,000 tons, and in August of this year 168,000 tons.

INDIA

South Indian Electrification

It is learned that the impending electrification of the 80-mile broad-gauge section of the South Indian Railway between Shoranur and Cochin, referred to in our September 30 issue, will not be undertaken. Extension of the existing electrification between Madras and Tambaram on the metre-gauge for a farther 19 miles is, however, under consideration; and there are proposals for extension to Trichinopoly by two routes.

NEW ZEALAND

Operating Results

A new record in gross revenue was established this year, with total receipts of £18,597,728, exceeding last year's record by £1,526,856, or 8·94 per cent. Most of this additional revenue resulted from the increase in fares and freights, which operated throughout the whole year, as compared with only seven months during 1947-48.

The increase in passenger revenue amounted to £71,711. Goods revenue continued its steady upward trend, attaining a new peak of £11,747,129, an increase of £1,260,385, or 12·02 per cent., on last year. Of this increase, £891,050 was due to the 1947 tariff adjustments, and £369,335 to additional traffic.

The number of passengers carried rose from 25,887,189 to 26,167,845. Goods tonnage totalled 9,666,130, or 142,087 more than the record achieved last year.

Gross expenditure amounted to £19,700,594, an increase of £1,989,697, or 11·23 per cent., due mainly to increased wages and concessions granted during the year by the Railways Industrial Tribunal, additional man-hours incurred in handling the greater volume of traffic, and increased expenditure on fuel, stores, and material. The net operating loss, £1,102,866, was recovered from the economic stabilisation vote.

As compared with the cost of New Zealand coal of equivalent fuel value, the extra cost of imported coal and fuel oil was £793,654, and by their use of this imported fuel the railways have enabled cheaper New Zealand coal to be released for industrial and domestic purposes. It is not unreasonable to claim, therefore, that the railways have carried an added burden which should have been shared by the rest of the community.

Subsidiary services showed a net revenue of £346,508. The most important, the road motor services, showed a profit of £27,336, from a record revenue of £1,910,251. This was an increase over the previous year of 9·67 per cent.; expenditure, £1,882,915, rose in higher ratio than revenue, due mainly to the higher wage rates and to higher depreciation charges, fixed charges and licence fees.

IRELAND

Radio-Equipped Train

To mark the centenary of the Dublin-Cork line, the final section of which was opened on November 1, 1849, Coras Iompair Eireann ran two special excursion trains at an all-in fare of £1, covering the return journey to Cork, a bus tour there, and meals on the train. Mr. P. Henegan, Deputy Operating Superintendent, had the idea of installing radio in the second train, so that passengers could listen to music, a running commentary on the countryside, and interviews with the enginemen. The success of the experiment has prompted the company to extend the system to selected trains by next summer. Loudspeakers in the compartments are connected with a travelling broadcasting station in the guard's van.

UNITED STATES

Large Diesel Orders

The Pennsylvania Railroad has now placed orders for 226 diesel-electric locomotives costing about $36 million. This brings to more than $300 million expenditure since 1946 on new and modernised equipment. The Pennsylvania has in service 594 diesel-electric locomotives. Those now ordered will bring the total horsepower to 1,433,100 for the 820 diesel locomotives.

The order, covering 45 locomotives for main-line freight service, five for main-line passenger service, and 176 for yard shunting, transfer, and local freight service, is the largest single purchase of diesels yet made by the Pennsylvania.

The 45 main-line freight diesels will be put on services where they will produce the greatest economy both on main and secondary lines, and with the 82 locomotives of this type already in use, will materially improve service efficiency.

The five new passenger diesels, supplementing the 63 already in service, will be assigned to through runs in various parts of the system. The 176 new diesel shunters added to the 449 already in operation will enable the Pennsylvania to dieselise completely its shunting operations at many places, with consequent savings and continued improvement in terminal service.

The Pennsylvania continues to be the largest user of coal-burning and electric locomotives in North America, and the latest orders will make it the largest operator of diesel locomotives.

SWITZERLAND

Travel Services to Western Germany

Following a recent invitation by the Swiss Federal Railways, a conference between delegates of German travel bureaux and other travel and tourist organisations and Swiss representatives of the Swiss travel and tourist services, is to take place in Berne in the near future. Problems concerning the development and intensification of travel services and facilities between the two countries are to be discussed.

New Type of Train Brake

A new type of fast train brake developed recently by Werkzeugmaschinenfabrik Oerlikon (Oerlikon Machine Tool Works), has been adopted by the Federal Railways for their latest lightweight carriages. Early this month, demonstration trips were organised in collaboration with the Federal Railways on the 25½-mile Romanshorn-Frauenfeld line, and on the 28-mile section between Airolo and Biasca on the Gotthard line, when the working of the brake was shown to the Brake Committee of the International Union of Railways. Members of the Technical Questions Committee of this Union took part in the last demonstration trip on November 5. Representatives of Belgium, Denmark, France, Western Germany, Italy, the Netherlands, Sweden, and Switzerland attended.

ARGENTINA

Central Argentine Accounts Approved

The Government has now approved the final yearly accounts of the Central Argentine Railway for the period 1945-46. Revenue was 174,787,112.73 pesos, expenditure 148,118,788.23 pesos, net profits 26,668,324.50 pesos, and the 3 per cent. Mitre Law contribution 800,049.73 pesos.

Amenities for Long-Distance Travel

The General Belgrano Railway will shortly introduce cinema shows in some of the principal long-distance trains. On some expresses of the General San Martín Railway, the installation of radio receiving sets is being begun.

Tour of Transport Minister

The Minister of Transport, Lt.-Colonel Castro, recently returned from a visit to the north, during which he inaugurated a new tyre and axle plant at Cordoba equipped with British machinery. He also investigated on the spot the proposals for the centralisation of all services at the station of the General Mitre Railway. The Minister declared open the La Cocha-Rumipunco section of the Superí-La Cocha line, which when completed will give direct rail connection between the capital cities of the Provinces of Tucumán and Catamarca. In Tucumán, he visited the Tafí Viejo workshops and stated that a block of workmen's dwellings would shortly be built, and he also visited

the site of the new central station, which will be commenced immediately. After an inspection trip over the new Northern Transandine line as far as Socompa, he returned to Buenos Aires by air.

CHILE

New Southern Transandine Railway

The Minister of Public Works & Communications, Señor Ernesto Merino Segura, has authorised the expenditure of 2,000,000 pesos on the Lonquimay (or Southern Transandine) Railway which will eventually connect the port of Lebú in Chile with Bahía Blanca in Argentina. This will enable the construction work to be continued until the Chilean Congress approves the issue of bonds to the amount of 13,000,000 pesos, which will allow of the completion of the line on the Chilean side.

FRANCE

Railway Loan from Switzerland

Negotiations in progress for a Swiss loan of Swiss fr. 250 or 300 million (French fr. 20,000 to 25,000 million, the approximate equivalent of £20,408,000 to £24,995,000) to the French National Railways are reported to be nearing a satisfactory conclusion. The first approach was made in August, but some delay occurred because of the necessity of settling first the problem of the Swiss financial interests in France which had been affected by the French industrial nationalisations.

Summer Holiday Traffic from Paris

More than 11,075,000 passengers left Paris for holiday resorts during July, August and September last, using long-distance services from the six main termini. The Gare de Lyon headed the list with 2,428,000 departures, and the Gare du Nord followed with 2,366,000 passengers. Montparnasse with 1,950,000 holidaymakers was only slightly ahead of Gare d'Austerlitz with 1,909,000, and the Gare Saint Lazare recorded 1,285,000, and Gare de l'Est 1,137,000 passengers.

Despite this heavy traffic, the regularity of services was maintained throughout, it is claimed. The average of trains arriving punctually at destinations was 84 per cent.

New Bridge on the Lyons-Marseilles Main Line

The building of the new Donzère-Mondragon hydro-power station between Montélimar and Avignon entailed the construction of a feeder canal which the Lyons-Marseilles main line is to cross twice between Donzère and Mondragon Stations, about 14¼ miles further south. Donzère Station is about 102 miles south of Lyons Perrache, and 8¼ miles south of Montélimar.

The first of the two bridges over the canal, a metal structure, is in the course of erection, and the first section has been completed. The bridge will have four spans, two of 147 ft. 7 in. each, and two of 160 ft. 8½ in. each, and will be ready for service in February next.

Timber for the British Railway Industry

An agreement was recently concluded between Great Britain and France according to which French supplies to the United Kingdom of timber to be used for railway sleepers and for wagon-building will be larger in the next few months than originally envisaged. The timber is to come from the vast stocks salvaged from the extensive fires which ravaged the Landes region in the past summer.

The supplies will include 2,000,000 sleepers as compared with the 350,000 originally foreseen, timber for wagon-flooring amounting to 1,765,850 cu. ft. as against 706,340 cu. ft. originally intended, and timber for body-making totalling 20,000 to 25,000 standard of approximately 2½ *tonnes* each. It is the first time that Great Britain has bought timber for body-making from France.

BELGIUM

Re-opening of the Moresnet Viaduct

The longest railway viaduct in Belgium, carrying the Tongres-Aachen line over the Gueule Valley between Montzen and Moresnet, has been reconstructed after complete destruction in the war. It was re-opened on October 18. The viaduct, which carries a double track, is 1,107 metres long and between 23 and 52 metres high. It consists of 22 steel lattice girders 48 metres long and constant height. For the opening ceremony an official party was conveyed to the bridge by a special railcar.

U.S.S.R.

Wireless for Locomotives

According to a recent message from Moscow all locomotives are to be equipped with wireless receiver and transmitter sets enabling the locomotive crews to be in constant communication with headquarters of their mechanical engineer as well as with the traffic offices concerned.

Publications Received

Corrosion of Iron and Steel by Industrial Waters and its Prevention. (Iron & Steel Institute Special Report No. 41). By the Industrial Waters (Corrosion) Sub-Committee of the British Iron & Steel Research Association. London: The Iron & Steel Institute, 4, Grosvenor Gardens, S.W.1. 8½ in. × 5½ in. 56 pp. Illustrated. Price 3s. 9d. to members and 5s. to non-members.—The report is divided into four sections. The first is introductory, describing the theory and mechanism of corrosion in its various forms. The second deals with the causes of corrosion; points discussed include the effect on corrosion of the composition temperature and rate of flow of water, also the composition of iron and steel and the effect of surface finish. The third section deals with the occurrence of corrosion in plant such as water mains, boilers, and heating and refrigerator systems. In the last section the various methods of preventing corrosion are discussed. There are a short bibliography and a comprehensive list of papers on corrosion and allied subjects published in English since 1927.

Die Dampflokomotive, Lehre und Gestaltung. By F. Meineke. Berlin: Springer Verlag, Jebensstrasse 1, Charlottenburg 2. 10 in. × 7 in. × 1¼ in. 517 pp. Paper covers. Price D.Mark 67.50.—It was in 1931 that Meineke's classic "Kurzes Lehrbuch des Dampf Lokomotivebaues" was published in the equally classic style of Springer's Berlin house. Authentic, compact, and correct, that volume dealt with the fundamentals of locomotive design and construction. Its concise and even cryptic approach in no way depreciated its value. The present volume, in austerity paper binding and unfortunately uncut, contains all the information of the earlier book brought up to 1939 only as far as German practice is concerned. The author neglects British work in regard to locomotive power and proportions and train resistance, and has not really incorporated into his text the substance of the extraordinary work done in France from 1931 to 1938. This section is really a re-edition of the 1931 book with the minimum possible alteration.

After this section, there is a lengthy section, running to 184 pages, on locomotive types and details of practice up to 1939-40, the description and illustrations of the details being reminiscent of Garbe's celebrated work. Illustration and discussion of the details is complete, and covers not only frames, boxes, rods, valve gears, cylinders, and tyres, but also boilers, boiler details, and tenders. A feature of Continental locomotive books has been that detail drawings are reproduced with exceptional clarity, but that general arrangements are almost unreadable. In this book this fault has been eliminated by having no general arrangements except two or three in loose folded plates in a pocket and which are big enough to be legible. Other locomotives are illustrated by lineal-dimensioned diagrams captioned by the telescopic German system of shovelling all leading and characteristic dimensions together.

Some of the details described are of appreciable technical interest, but few of them relate to post-1938 practice, and some—*e.g.*, of the Austrian 2-8-4 and Soviet 0-10-0 engines—are from locomotives new 20 years ago. There are 40 pages of tables giving, in metric sizes, brief particulars of locomotives throughout the world built between 1910 and 1939, and of two or three types built 1941-43. The whole book is a competent survey of the steam locomotive through Central European spectacles, with all examination of fundamentals based on practice therefrom, and with André Chapelon alone recognised as one outside that area who may have contributed a little to progress in locomotive design.

National Insurance. By John Gazdar. Second Edition. "This is the Law" Series. London: Stevens & Sons Ltd., 119-120, Chancery Lane, W.C.2. 7¼ in. × 4 in. 96 pp. Paper covers. Price 4s.—The 80 sets of Orders and Regulations modifying the National Insurance Act since it became law have necessitated a second edition of this useful booklet, of which a notice appeared in our January 9, 1948 issue. The new material is referred to where necessary, in the revised text, and there is an additional appendix of Orders and Regulations. The subject index might be expanded with advantage; a reference to "railway companies" as public authorities needs correction.

Thos. W. Ward Precision Measuring Instruments.—Thos. W. Ward Limited, Albion Works, Sheffield, has issued an illustrated catalogue of vernier measuring instruments. These include calipers, gear-tooth calipers, and height gauges of various types, and special instruments such as those adapted for use by the blind, and those which give readings in both English and metric graduations from the same position. All the instruments described measure 0·001 in. or 0·02 mm., according to type.

Impressions of the Hungarian Railways

Although faced with a serious shortage of materials, the system has rapidly recovered from the devastation of war

(From a Correspondent)

THE Hungarian State Railways—the prefix Royal has been dropped since 1944—have been restored almost to their pre-war condition. Under Ernö Geroö, the energetic Minister of Transport & Communications, reconstruction was pushed ahead with vigour from 1945 onwards. At the end of that year only 290 locomotives, 14 railcars, 495 coaches, and 6,458 wagons were fit for service, and 876 bridges had been blown up and much track destroyed. Today all routes are in service, apart from two bridges across the Danube and one across the river Tisza which carried branch or relief lines. Double track has been restored on 95 per cent of the pre war route mileage.

Until the autumn of 1946 the system was split in two by the Danube. At the end of that year the bridge south of Budapest, between the Kelenföld and Ferencváros stations, was opened to single-line traffic. A second bridge was put into operation alongside in November, 1948, and this section is now perhaps the busiest in Hungary with a never-ending stream of passenger and freight trains in both directions.

Train services are based on Budapest, and in general there are at least two fast trains each day, averaging perhaps 30-35 miles an hour including stops, to all parts of the country. These leave between 6 a.m. and 8 a.m. in the morning and 6 p.m. to 7 p.m. in the evening. There are similarly two services in the up direction, though on the remoter branch lines the first train of the day is apt to leave at such an inhospitable hour as 3.30 a.m. These services are supplemented by express railcar services on the more important lines and by stopping trains which meander along from one side of the country to the other at an average speed of 20 m.p.h. or even less. A supplementary fare is payable by passengers travelling by a fast train and an even higher one on a railcar.

Motive Power

Locomotive stock is of entirely Hungarian origin, except for the ubiquitous U.S. Army 2-8-0. The United States authorities sold 510 of these locomotives to Hungary in 1947. Today they are known as the "411" series and handle all the main-line freight trains and much of the marshalling yard work. It is likely, however, that they are too heavy for many of the secondary routes. The next largest group of main-line locomotives is the "424" series of 4-8-0. These have 5 ft. 3 in. driving wheels and two cylinders 23½ in. by 26 in. Twenty-five of this design were put into traffic in 1924 5. They were adopted as the Hungarian war locomotive and between 1940 and 1944 a further 115 were built at the Budapest State Works. Five more came out in 1947. All these were to the original design except for the suppression of the Pecz-Rejtö feedwater heater and the placing of the brake pump in the now customary position on the front buffer-beam.

Other locomotives working passenger trains are the "301" series of Pacifics; the "328" series, a 4-6-0 with a Brotan boiler; the "327" series, a small 4-6-0; the "324" series, a 2-6-2 with or without a Brotan boiler; and the "442" series a "282" tank design with a Brotan boiler which handles the outer suburban traffic from Budapest.

The country branch line is widely developed in Hungary and there are three different types of 2-6-2 tanks for branch work. The largest is the "342" series with a Brotan boiler. There are also two light varieties, the "375" class, which first came out in 1916 and of which a further series is being built this year with a Brotan boiler, and the "376" series with smaller driving wheels. In addition, there are over one hundred of the 2-4-2 tank "22" class, first built in 1928. One or two of the 2-2-0 tank railmotor engines are still in traffic.

Among other locomotives are the "242" series, a fully streamlined 4-4-4 tank, now used on Budapest-Miskolc trains and the "326" series which handle much of the shunting round Budapest. These are ancient looking 0-6-0s with outside cylinders and frames. The design first appeared in 1882, but even then it was only a slight enlargement of an Austrian type dating back to the 1850s.

Derelict Locomotives

A point which strikes the traveller on the erstwhile German lines of communication to Russia is the large number of derelict locomotives lying at each running shed. Nearly every variety of German and Austrian ten-coupled engine is to be seen, as well as one or two of the 2-12-0 of the late Württemberg State Railways. There are also a few Italian engines, though all of Austrian origin. No attempt appears to have been made to repair any of these foreign locomotives

Finally on the locomotive side there is to be built a 4-6-4 express passenger type, "303" series. An excellent model of this machine is displayed in a Budapest office window and shows it to have driving wheels about 6 ft. in diameter and a very large boiler.

Unlike the locomotives, the rolling stock displays many international characteristics. All is now lettered with the Hungarian initials, M.A.V., but many ex German, Polish, and Italian coaches were recognised and the wagons appeared to originate from half the countries in Europe, with a strong Deutsche Reichsbahn flavour.

The four-wheel type of coach reigns supreme on the stopping trains and following pre-war practice only second and third class is provided, except for a few international services. The Ganz factory is turning out many fine new bogie coaches with a strongly Germanic appearance, including semi-streamlining at each end, and also four-wheelers with an exceedingly long wheelbase.

Upholstery was, of course, never to be found in the third class, but under post-war conditions it is apt to be missing from the seconds as well.

As on many other European systems the freight "box" wagon has to be temporarily used for passenger purposes. In Hungary, rakes of brand-new vehicles are used with their sliding doors fixed in the half-open position and the gap filled by a permanent side opening door. The ventilation apertures are glazed and benches are fixed round the walls and in the centre. In the middle of each van is a coal stove.

The electrified section from Budapest to the Austrian frontier is in full operation as far as Györ, 92 miles, but the short line from there to Hegyeshalom on the frontier has yet to be put in order. A special drive was made to repair the numerous 0·76 metre gauge lines and the tramways of various gauges; those which were previously under other administrations still maintain their separate identity.

French Railways Revival

IN no other country were railways so sorely needed as in France when the war ended, leaving lines in many places a tangled maze of crumpled steel, wrecked signal boxes, ruined stations and shunting yards, broken-down bridges and viaducts, bombed locomotives and wagons with bomb craters all along the tracks, a vast scene of desolation and destruction. Wrecked bridges and viaducts numbered 3,200, comprising 2,600 railway bridges. Of 300 large stations, 115 were destroyed: 24 great marshalling yards out of 40; 77 locomotive depôts out of 144; and 19 extensive workshops out of 33.

A true historical picture of this nation-wide ruin, resulting from the Allied bombing, the German systematic wreckage and patriotic sabotage by French railwaymen in their resistance to the invader, is now on view in France in the form of a comprehensive film entitled "La Renaissance du Rail." The film shows, too, how the French railwaymen and engineers tackled with primitive means the colossal task of reconstruction and thus ensured the rapid renaissance of the industrial and economic life of France.

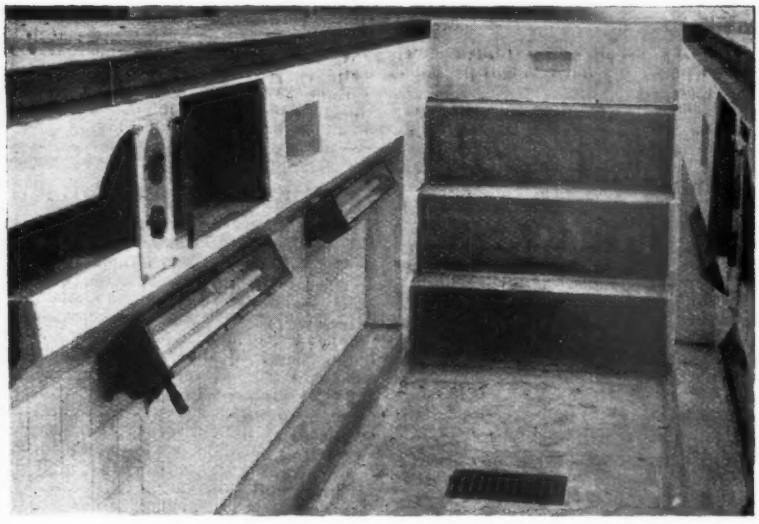
It is based on documents and views collected by Monsieur O. Leduc, Ingénieur en chef de la Reconstruction S.N.C.F., and was assembled in the Section Centrale Cinématographique by Monsieur Georges Chaperot with Monsieur Claude Dauphin giving a running commentary. The musical accompaniment, by Monsieur Maurice Frank, was executed by the symphony orchestra of the South-West Railwaymen.

The film presents no stars but depicts the real work of the railwaymen in reconstructing the lines and bridges. At first they had few engines and for these it was difficult to find fuel and water. As the water columns had been demolished, rain water was pumped up from bomb craters to fill the boilers, and coal was carried from wagons to tenders in wicker baskets. Steam shovels and powerful cranes later accelerated the work and ingenious devices of the French engineers hastened the provisional rebuilding of bridges over the Loire at Orleans and Montlouis and over the Rhine at Kehl near Strasburg. Later, the provisional bridges were converted into permanent structures. The Caronte Viaduct over the Etang de Caronte near Marseilles was reconstructed with German material so that the middle section can be lifted by hydraulic power in 15 minutes to allow ships to pass.

New locomotives were built by using the underframes, wheels and other parts cut from old engines by oxy-hydrogen blowpipes. American and British army engineers aided the reconstruction, restoring and maintaining railway communication with eastern Europe. "Renaissance du Rail" gives a vivid pictorial description of the restoration of railway transport throughout France and is of great interest both to railwaymen and the general public.

London Transport Vehicle Repairs

Modern docking pits at St. Albans garage



View of the working pit showing fluorescent lighting

ENGINEERS of London Transport have evolved a new design of major docking pit, and in the first instance examples of these have been installed at the St. Albans garage. There are a number of "Q" type side-engine and "T.F." underfloor engine vehicles maintained at St. Albans, and this type of pit is particularly suited to repairs of this nature.

General Design

The principal feature of the new pit, to which we referred in an editorial note last week, is the central communicating trench. At the St. Albans garage this had to be considerably shortened, as the pits were constructed near existing pits; it is intended, however, when new garages are being built, to run the central trench the full width of the pits. Despite the shortening of the communicating trench, London Transport engineers consider that the incorporation of the central trench has increased very considerably the amount of natural lighting available to the maintenance staff, in addition to giving them a greater area in which to work, and has eliminated that feeling of restriction usually associated with pits of orthodox design.

The width of the central communication trench is 7 ft. 6 in., and it was necessary to bridge this width with a material capable of bearing the weight of the vehicle, and which would be easily removed. The problem was resolved by the use of a lightweight hinged bridge supported by a telescopic strut. The equipment has been designed for quick action and can be put into use or removed by two men in less than a minute.

The bridge materials are made of fabricated duralumin, and the steel fixing screws are cadmium plated to prevent electrolytic action between the steel and duralumin.

After a vehicle has been driven into its repair position across the bridges, the bridges are lowered and rest against stops fitted at the bottom of the communicating trench; the vehicle is supported at each corner so that access can be obtained to any part of it and work can be simultaneously carried out from the front axle to the rear axle.

Another innovation is the use of installed pit jacks so placed that standard post-war vehicles with a wheelbase of 16 ft. 4 in. can be driven on to them, and can be raised or lowered simultaneously or individually by the opening or closing of the corresponding valve in the pit below. Vehicles of longer wheelbase can be accommodated where the wheels can be positioned on the platforms; where this is not possible, the position of the vehicle is adjusted for front or rear axles as required. The jacks are oil-operated, and the platforms, when in the lowered positions, fit flush to the garage floor. They are claimed to be the only jacks of this type in the country and were constructed by Tecalemit Limited in conjunction with the department of the Chief Mechanical Engineer (Road Services).

Design of Lighting and Heating Equipment

Artificial lighting is supplied by fluorescent tubes 3 ft. long set in aluminium housings specially designed and cast at the Chiswick works; they incorporate armour plate glass and are both gas- and flame-proof. The walls of the pits and communicating trench are finished in an oil-resisting white glazed tiling, and where the concrete surface is exposed at high level, it has been treated with an oil-resisting enamel. Those finishes give the greatest surface area for reflected light, whether natural or artificial.

Electrical tubular heaters have been installed beneath the pit floors to maintain a comfortable working temperature; the heaters are of comparatively low wattage and are intended to do no more than take the chill off the concrete floors.

Removal of Waste Oil

Provision for the removal of waste oil has been arranged by means of an outlet-pipe built into the pit walls; the oil, which drains directly into this pipe through a shallow funnel mounted on a cradle attachment, is stored in a nearby tank from which it is removed in drums for reclaiming. It is proposed to instal an automatic pump which will operate when the waste oil reaches a predetermined level, pumping the waste oil to a large storage tank and collected by a tanker wagon. The trenches in the floors are designed to take the necessary piping for pressure feeding lubricating oils and grease.

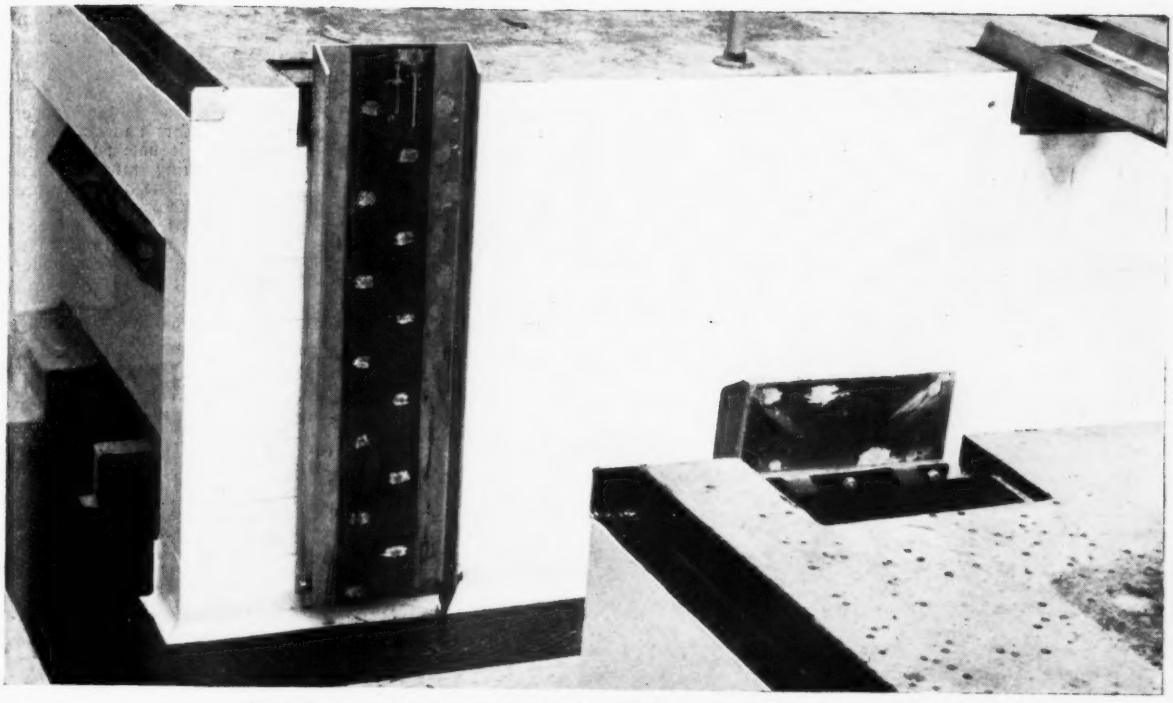
London Transport engineers consider that, although minor modifications may be necessary, from the experience gained so far, it is unlikely that they will revert to the former type of pit for major dock work.

AUTUMN OVERSEAS VISITORS TO BRITAIN.—The Travel Association records that of the 43,718 foreign visitors to Britain during September, 9,967, or 30 per cent. more than in September, 1948, were from the U.S.A., bringing the total of American visitors for nine months of this year to 84,990. In addition 25,609 Americans in transit have contributed dollars through fare payments by British ships and aircraft. The total number of visitors from all countries during the nine months was about 450,000, and the estimate of 560,000 visitors for the whole year might possibly be exceeded. There was a marked increase in the number of visitors from South America.

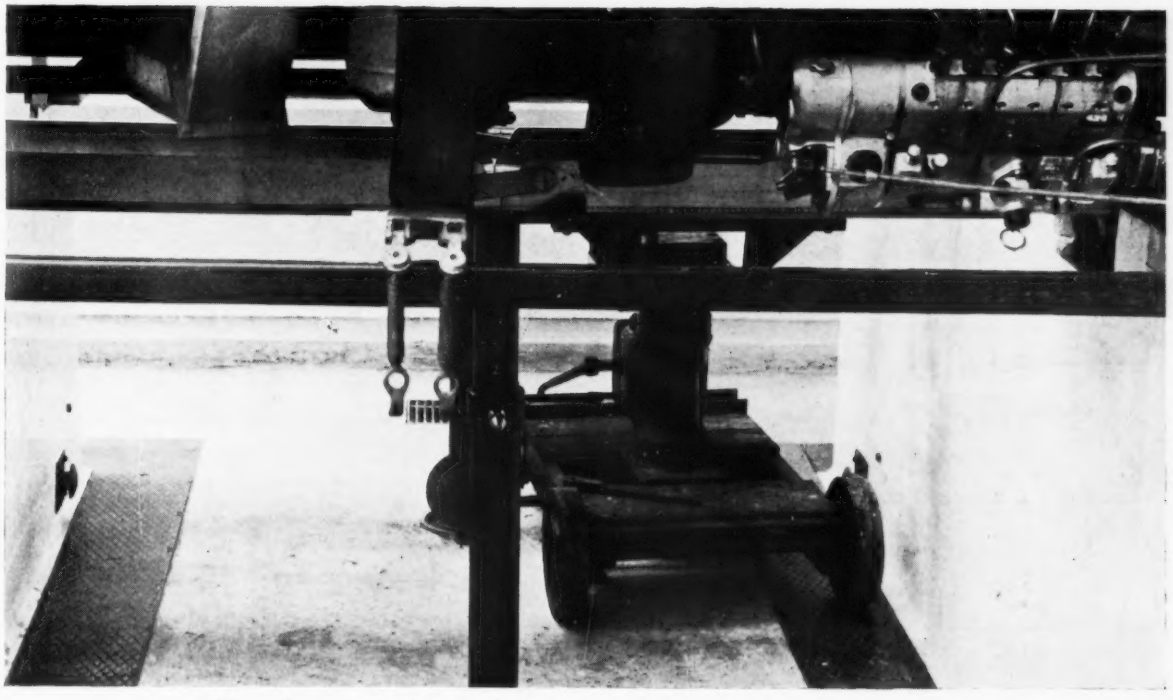
FESTIVAL OF BRITAIN.—The centre-piece of the Festival of Britain, to be held from May to September, 1951, will be the exhibition in London on the south bank of the Thames, between County Hall and Waterloo Bridge. The keynote of this exhibition will be the history of British achievement illustrated by displays chosen for their relevance to the story. Transport exhibits will include examples of British locomotives, road vehicles, aircraft, and marine equipment, and working models of docks, airports, and so on. New works undertaken by London Transport to improve Underground access to the South Bank exhibition site were briefly described in our April 1 issue. Two supplementary exhibitions in London, and one in Glasgow, will deal in more detail with architecture, science, and heavy engineering respectively, and two travelling exhibitions will tour the country.

RESEARCH & DEVELOPMENT DIVISION: B.S.F.A.—For some time past the British Steel Founders' Association has recognised the need for co-operative research to reduce manufacturing costs and improve quality. The report of the B.S.F.A. Productivity Team to America served to emphasise this need. Plans comprise the constitution of a separate Research & Development Division, the whole of whose resources will, if need be, be found by member firms. The primary object of the Division will be to provide members with information vital to the continued improvement of productivity. In the first place it will concentrate on bridging the gap between established scientific knowledge and existing manufacturing processes so that the best production techniques and most suitable materials can be made known. Management and organisation is to be vested in a Director of Research and an Executive Council. The Association will function in a different way from other research bodies working on steel foundry problems, and it is intended to maintain the closest possible contact with them, to ensure that no problems of importance to the industry are neglected.

London Transport Vehicle Repairs



Central communicating trench showing bridge-piece in lowered position



View of communicating trench showing accessibility to the under-floor engine

2-8-2 Locomotive for South African 2-ft. Gauge Line

Powerful design for handling heavy trains over a steep and sharply-curved route

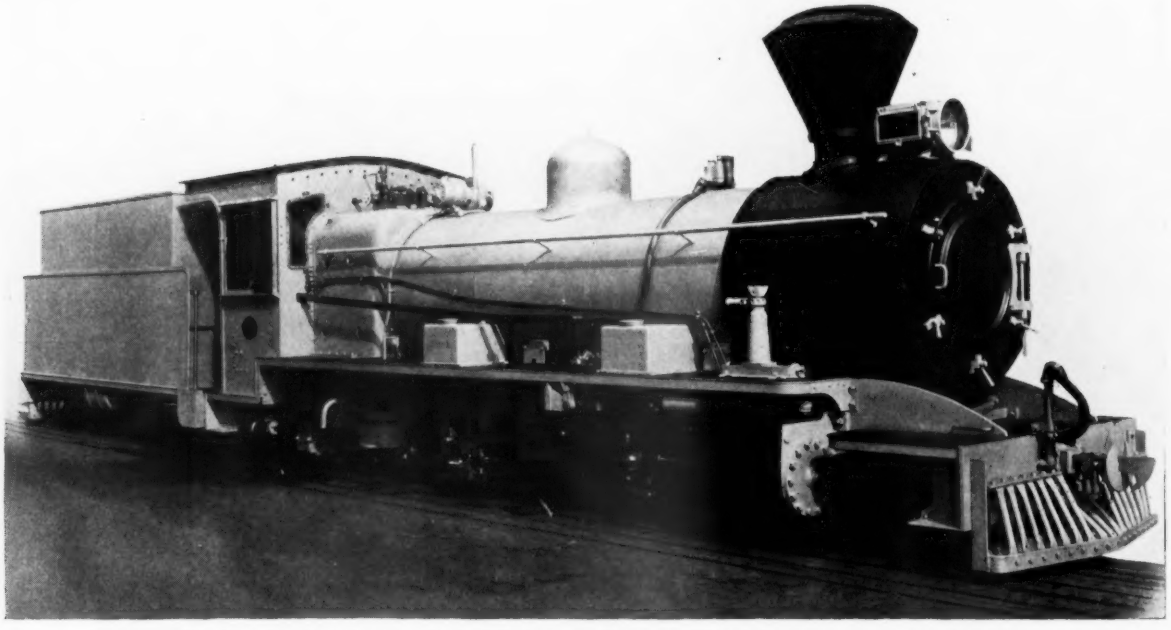
A 2-8-2 TYPE tender locomotive has recently been completed by the Hunslet Engine Co. Ltd. for the Eastern Provinces Cement Company of South Africa. The locomotive will handle heavy limestone-traffic on a 2-ft. gauge line, hauling 400-ton trains on the level and controlling them down 1 in 50 grades.

Curves of 230 ft. radius are to be traversed at low speed, and with a gauge widening of $\frac{1}{2}$ in. to $\frac{5}{8}$in. Grades are as steep as 1 in 45 to 1 in 50, combined with a double reverse curve, and the locomotive has to be capable of surmounting the gradients engine or tender foremost without the inner firebox crown becoming uncovered and without priming. In the $11\frac{1}{2}$ miles of principal line over which the locomotive runs, the rise is 630 ft.; there are 32 left-hand and 28 right-hand curves, 43 of which are within a distance of four miles. With the maximum permitted load, the train is on three curves simultaneously.

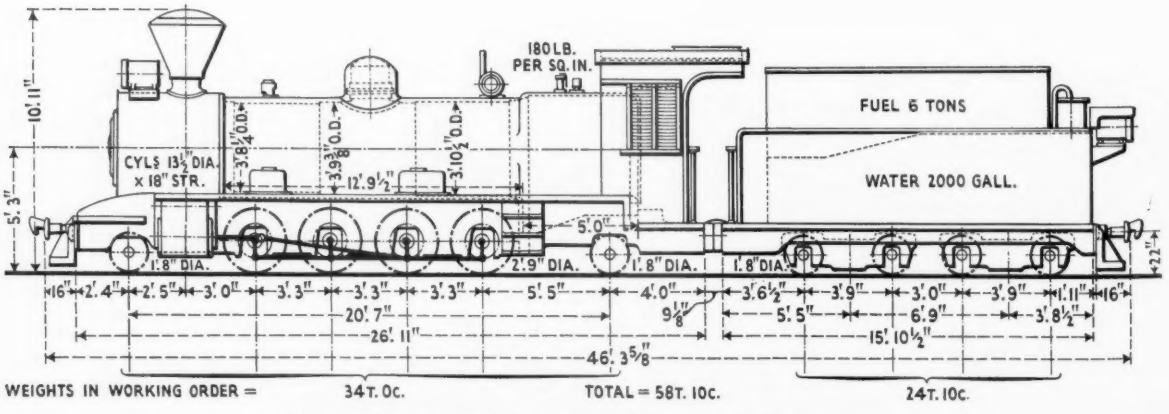
To ease the movement on curves, the tyres are thinned on the intermediate coupled wheels; otherwise treads and flanges are to South African Railway standards for 2-ft. gauge lines. The use of 35-lb. rails has led to limitation of the axle-load to $6\frac{1}{2}$ tons, a low figure for a locomotive exerting over 15,000 lb. tractive effort. Dimensions are limited to 7-ft. width and 11 ft. height. The grade is against the empties, and normally 16 to 18 wagons with a weight of 112-130 tons are hauled uphill; the previous 4-6-0 and 4-6-2 locomotives maintained about 8 m.p.h. uphill, with 100 tons trailing, and at the top of the gradient steam pressure fell to 100 lb. Conversely, these conditions mean that downhill the same number of loaded trucks, weighing up to 300 tons, must be handled safely, and adequate braking is essential; the equipment comprises steam brakes on the locomotive and vacuum brakes on the wagons. In each direction about 70 min. are needed to traverse the line.

As lineside fires are a constant danger, the boiler and cylinders had to be designed to maintain adequate power without a very high firing rate; a spark arrester has been fitted as a further precaution. Soft coal is the usual fuel.

Because of exceptionally poor water conditions, particular attention was given to the boiler and its cleaning. The boiler, which is of the top-feed type, is fitted with three Everit blow-off cocks, and a large number of handholes and wash-out plugs



Hunslet 2-ft. gauge 2–8–2 locomotive for the Eastern Provinces Cement Company of South Africa



Principal weights and dimensions of the new 2–8–2 locomotive

have been arranged in the barrel and Belpaire firebox to facilitate cleaning. Boiler mountings include two 2-in. Ross safety valves, a sliding-type regulator with double-arm handle, and two Gresham & Craven 8-mm. injectors. The barrel has a maximum dia. of 3 ft. 10½ in., and length between tubeplates is 13ft. 1⅛ in. The grate is 4 ft. 5 in. long by 3 ft. 5¾ in. wide, and has a simple arrangement of rocking bars. The evaporative heating surfaces comprise 886 sq. ft. from 138 steel tubes, 2⅛ in. o.d. by 12 s.w.g., and 64 sq. ft. from the firebox.

Balanced slide-valves above the cylinders are actuated by Walschaerts valve gear, giving a full-gear forward travel of 3⅜ in. and a maximum cut-off of 80 per cent. Valve lap is ¾ in., and slip of the die-block in full gear is only $\frac{3}{16}$ in.

The 1-in. plate frames are outside the wheels, and are in two sections, tied together immediately in front of the firebox by steel castings. The axle journals are 7½ in. dia. by 6½ in. long, and the axleboxes are of gunmetal with whitemetal inserts. Cast-steel axlebox guides are used, and include adjusting wedges on the front of each guide. Overhung laminated springs are used for the coupled boxes though the engine is not compensated. A lateral movement of 5½ in. in the leading and trailing trucks has been allowed for.

Other locomotive fittings include: Sunbeam electric lighting equipment with a 500-W. 32-V. turbo-generator set; hand sanding in both directions; balloon chimney with spark deflector; a spark arrester of wire netting; Norwegian-type centre couplers; and Detroit four-feed lubricator for cylinders and valve chests.

The bogie tender is of normal construction; the underframes are constructed of steel channels, with plate-frame bogies and a single laminated spring on either side. The tank is built up by welding and riveting. Automatic vacuum brakes apply blocks on all tender wheels.

The principal dimensions of the locomotive are as follow:—

Wheel arrangement	2-8-2
Cylinders, number, dia. × stroke ...	(2), 13½ in. × 18 in.
Dia. of coupled wheels	2 ft. 9 in.
Heating surface :—	
Small tubes	886 sq. ft.
Firebox	64·5 sq. ft.
Total	950·5 sq. ft.
Grate area	15·5 sq. ft.
Working pressure	180 lb. per sq. in.
Tank capacity	2,000 gal.
Fuel space	6 tons
Rigid wheelbase	9 ft. 9 in.
Engine and tender wheelbase ...	39 ft. 4⅜ in.
Length over buffers	46 ft. 3⅜ in.
Weight empty, engine	30 tons 6 cwt.
,, ,, tender	9 tons 13 cwt.
,, in working order, engine	34 tons 0 cwt.
,, ,, ,, tender	24 tons 10 cwt.
,, ,, ,, engine and tender	58 tons 10 cwt.
Total weight on coupled wheels ...	24 tons 0 cwt.
Maximum axle load	6 tons 10 cwt.
Tractive effort at 75 per cent. b.p....	13,420 lb.
Ratio, adhesive weight ÷ tractive effort	4·0 to 1
Radius of curve	230 ft.

Transport of Bridge Structures

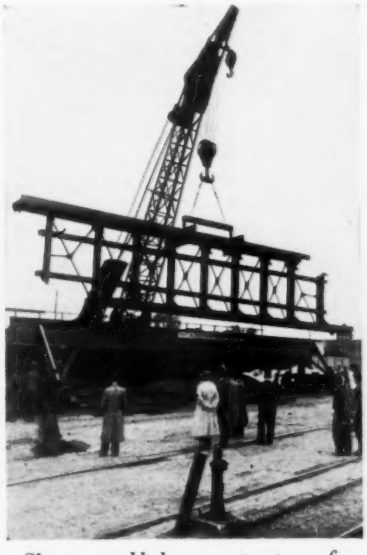
A new method of conveying parts for bridges, which has been tried out in Germany

A DEVICE designed to facilitate the transport by rail of pre-assembled steel parts for railway bridges from the workshop to the site has been tried out by the German railways at Hamburg and is described by Reichsbahninspektor Dietrich Hachmann in *Der Eisenbahnbau*, of July, 1949. The advantages of shop-assembly, as compared with site-assembly, are familiar, but the difficulties of bulk transport impose a severe limitation on the scope of shop-assembly methods. This applies particularly to steel bridge structures with lateral main girders, as they are too wide to be conveyed in the horizontal position and can only be transported "on edge" if they are to remain within the loading gauge. Such transport has been carried out in several instances, some of which are quoted by the author.

The new apparatus tried out at Hamburg is a further development in this direction. It consists of a longitudinal I-beam of 100 cm. height and 25 metres length, rigidly supported at points 1·3 metres from either end by steel frames resting on bogies. The upper flange of this strong beam is 3·9 metres above rail level and can be used for the edgewise suspension of the steel structure to be transported. If the full length of 22·4 metres between the bogie pivots is not required for a particular load, the distance can be shortened by adjusting the steel support so that the beam overhangs at one end. The load is therefore never far removed from the pivots and can be secured against lateral sway which may be caused by wind or centrifugal force. It is also possible to suspend the load eccentrically, if this is desirable for greater stability.

The apparatus (the German engineer expressly refrains from calling it a "vehicle") was first subjected to stability and running tests without load, under the auspices of the Reichsbahn Vehicle Testing Institute at Göttingen. For the stability test, a tensile and compressive force of about 13 *tonnes* was applied by means of two locomotives pulling and pushing the beam in the opposite directions.

The internal stresses were measured by means of expansion gauges, applied at 15 points; as a result, some minor modifications in the construction of the steel supports were carried out. For the running test, the device was coupled to two testing cars of the Göttingen Institute, one of them equipped with a recording dynamometer, and hauled at a speed of 25 m.p.h. Later, tests were also carried out under load, when swaying dislocations of not more than 30 mm. were measured. In practice, the speed has been limited to 15 m.p.h., and each trip under load must be specially authorised after a statical calculation has been carried out.



Shop-assembled superstructure for skew bridge being loaded

We are indebted to *Der Eisenbahnbau* for the accompanying illustrations.

Skew bridge loaded on special transport device

Post-War Development of Small-Tool Manufacture

Re-organisation for increasing production of twist-drills at the English Steel Corporation works

Degreasing and plastic dipping

TO meet the increasing demands for small tools, both for home use and overseas, the English Steel Corporation Limited is carrying out extensive alterations and installing additional machinery in the small tools departments at its Openshaw works. It is intended eventually to entirely re-organise all its small tool departments with a view to increasing production, to incorporate the latest methods of production, and to introduce the latest methods of stock control. The first stage in the new organisation was to allocate some 62,000 sq. ft. of floor space to the manufacture of twist-drills and to instal a finished tool stock room.

This stage has now been completed, and is in full operation, proving itself to be a valuable asset towards meeting the company's increasing commitments. The section now in operation is capable of producing all types of twist drills and rock drills, including twist drills which are used in jig boring machines, which must necessarily be finished to very close tolerances.

The average rate of production of the various types of drills is approximately 1,500 per hour. The earlier stages of production, cutting the bars to length, butt-welding the carbon steel shanks and high-speed steel and centreless grinding where necessary, are carried out in a section of the bar store before issue to the production lines. The bars are then loaded into trays, the number of bars in each tray depending on the size; in no case are the trays so loaded as to make them too heavy for handling. Straight shank drills are manufactured from high-speed steel and do not pass through the butt-welding process.

Machining Operations

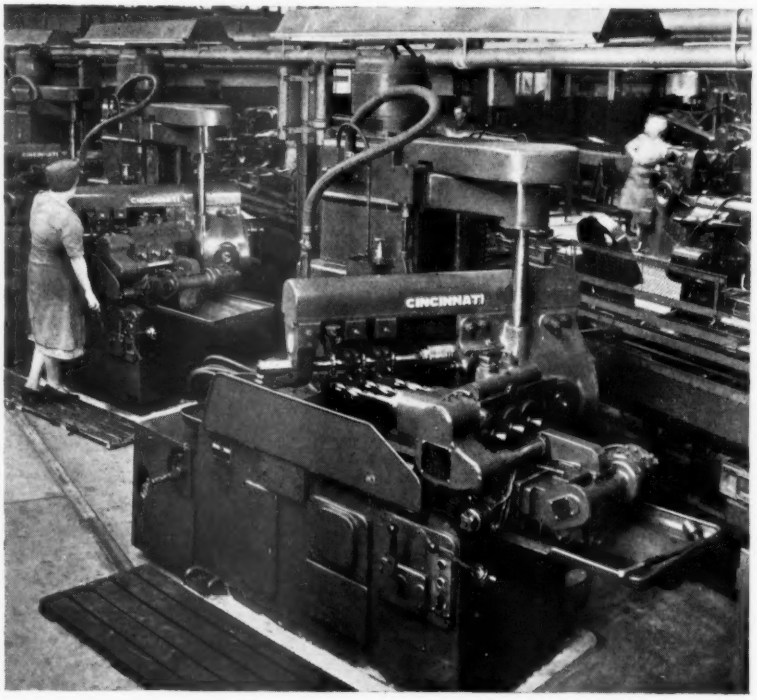
The machining operations of the various types of drills are arranged in three separate conveyor lines, with the exception of certain final operations which are common to all types, *i.e.*, heat treatment, sand blasting, tempering, and vapour blast. The loaded trays are distributed to the operators by means of a waist-high power-driven conveyor. Each machine alongside the conveyor carries a number and a corresponding number is allotted to each tray. The conveyor is operated from a central control room, a glass enclosure, centrally situated in each of the production lines. The conveyor operation is regulated so that after each complete circuit it automatically comes to rest with a numbered tray opposite the machine bearing the same number. The conveyor remains stationary for a sufficient period to allow the operator to unload the tray carrying inspected materials sent from the control room to his machine table, and to load his tray of completed work on to the conveyor for despatch to the control room for inspection, after which it is passed out for further operations.

Inspection is carried out at each individual stage of production, a system which avoids further expenditure on items which, if incorrectly machined, would necessarily be rejected during final inspection. The plant consists of machine tools of the most modern design using automatics and semi-automatics where the operations are applicable. Of special interest is a battery of Cincinnati automatics of the latest design engaged on flute milling operations. Each machine is capable of fluting three drills simultaneously; tang milling is carried out on machines having a constant rotating table, with a magazine feed.

Production Control Section

The production control section schedules and controls the movement of all work in progress in the department by means of a visual recording system, and provides a clear picture of work going through the shop, enabling the production staff to adjust production to meet current demands. The system provides accurate information on the productive capacity of each group of machines, or machine, and the position of any individual order is instantly available if required.

The stockrooms and despatch section, which has been designed to accommodate all small tools manufactured by the company, is adjacent to the twist drill manufacturing section, and similarly equipped with a waist-high conveyor, not power driven. After final inspection all tools are received into the stockroom and first degreased; they are then dipped in rust



A battery of Cincinnati automatics on drill fluting operations

One of the control rooms, showing working of power-driven conveyor and gravity rollers

preventive or coated with plastic, and packed in attractive cartons. They are stored in bins in curtained enclosures to exclude dust. A modern system of stock control and indenting indicates at a glance stock held, work in progress, and despatches.

The English Steel Corporation is one of the few manufacturers of engineers' small tools in this country which produces its own steel, and the many advantages of this cannot be overestimated, as it enables careful control to be exercised over all processes and is of particular value when working on new developments. No trucking or manhandling takes place, as the power-driven and gravity conveyors are so arranged that in all movements material from the initial stage of issue from the bar store to the receipt of the finished product in the stock rooms, does not leave the conveyors; trucks are used in the stock room only for stacking the boxes containing the finished product awaiting transit.

The department is cleaned by means of vacuum cleaners, of suitable capacity for cleaning large areas; in consequence, the finished product is free from dust at the time of dipping in rust preventive or plastic dipping. The lighting, ventilation, and heating are excellent throughout; the machines are well spaced, and there is no impression of overcrowding.

DIESEL PROGRESS ON THE CANADIAN PACIFIC.—Mr. N. R. Crump, Vice-President of the Canadian Pacific Railway, has announced that the company has placed a $12,000,000 order for 58 diesel locomotives for freight service on the 517½-mile Schreiber division of the main line, between Fort William and Cartier, Ontario. This is the largest order of this type placed by a Canadian railway. The Montreal Locomotive Works will build 44 units, and the new plant of General Motors Diesel Limited, London, Ontario, will build 14. These units will be among the first of the type to be manufactured in Canada and mark the establishment of an important new industry in the Dominion. Those to be built by the Montreal Locomotive Works are based on the diesels produced by the American Locomotive Company, Schenectady, New York, and the General Motors locomotives are counterparts of those built by General Motors, La Grange, Illinois. Mr. Crump said that substantial economies are expected from the dieselisation now proceeding. Staff are receiving training on diesel maintenance at Schenectady and at the La Grange works. The Montreal Locomotive Works contract is for 20 streamline Alco-G.E. 1,500-h.p. freight "A" units, 20 streamline Alco-G.E. 1,500-h.p. freight "B" units, and four Alco-G.E. 1,500-h.p. shunting locomotives. Delivery of the locomotives will begin early next year and be completed by August. General Motors will deliver 10 streamline 1,500-h.p. freight-passenger "A" units and four 800-h.p. yard shunting locomotives between July and September, 1950. The units will be geared to handle either freight or passenger trains, but Mr. Crump said that plans at present are to use them for freight trains only, and passenger trains will continue to be hauled by steam locomotives.

TWENTY-FIVE MILE LIMIT FOR ROAD TRANSPORT.—Details of the permits required by, and of the 25-mile restriction applicable to, road hauliers outside nationalisation, after February 1, 1950, have been issued by the Road Haulage Executive. After that date it will be a condition of every "A" contract or "A" or "B" licence, that goods shall not be carried for hire or reward if a vehicle at any time is more than 25 miles from its operating centre. There are important exceptions to this rule; first, where a permit has been granted by the R.H.E.; second, if the goods are traffics expressly excluded by the Act; third, where the operator of the vehicle has already received a notice of acquisition. No permit is required for, and no restriction placed on, the carriage of goods otherwise than for hire or reward in "B" or "C" licensed vehicles. All traders may, therefore, carry their own goods in their own vehicles as they wish. In the case of original permits, applications for which had to be made in July last, it is expected that the permits, together with vehicle passes, will be issued during the months of December, January and February next.

BUDGET CONTROL SYSTEM: B.E.A.—A budget control system has been introduced by the British European Airways Corporation in an effort to effect every economy consistent with efficiency. Each department, route, and station will now have its own budget. Mr. P. G. Masefield, Chief Executive of B.E.A., said recently that profits during July, August, and September totalled £97,461. The rate of fall in the deficit was faster today than at any time. In the last financial year the deficit was £2,800,000; in the first six months of the current year it had been at an annual rate of £1,700,000; and it was hoped to reduce it to £1,500,000. Much would depend on the effect of devaluation. During the last eight months, though B.E.A. had done 45 per cent. more flying, expenditure had remained constant at about £7,500,000.

Post-War Development of Small-Tool Manufacture

(*See article on page* 620)

Stockroom and finished material stores at the Openshaw works of the English Steel Corporation

A battery of grinding machines finishing grinding taps. The conveyor is seen on the right of the operator

RAILWAY NEWS SECTION

PERSONAL

Mr. E. R. Jones, Secretary & Chief Accountant of Ruston & Hornsby Limited, has been appointed to the board.

Señor Claudio Juan Trivi has been appointed Chief Electrical Engineer of the General Mitre (former Central Argentine) Railway, succeeding Mr. K. N. Eckhard, who, as already recorded, has retired.

Señor Rodolfo Roque Jones has been appointed Sub-Manager of the General Belgrano Railway (former Argentine State system).

Mr. F. J. J. Prior, hitherto Assistant Divisional Engineer, Plymouth, Western Region, British Railways, has been appointed District Engineer, Derby South, London Midland Region.

Mr. A. W. Lawson has been appointed to the board of Scammell Lorries Limited.

It was notified recently in *The London Gazette*, under the heading of Regular Army Reserve of Officers, Royal Engineers, that Major A. C. J. Payne, from Supplementary Reserve of Officers, is gazetted Major, November 2, 1949, retaining his present seniority, and is granted the honorary rank of Colonel. Colonel Payne is Principal of the Southern Region Staff Training College.

The Westinghouse Brake & Signal Co. Ltd. announces the following appointments, to take effect from January 1, 1950:—Mr. N. G. Cadman, Chief Brake Engineer, to be Deputy Works Manager (Engineering); Mr. K. H. Leech, Chief Design Engineer, to be Chief Mechanical Engineer; Mr. C. F. B. Shattock, Assistant Design Engineer, to be Deputy Chief Mechanical Engineer (Design); Mr. J. W. Kershaw to be Deputy Chief Mechanical Engineer (Brakes); Mr. H. M. Hoather, Assistant Brake Engineer, to be Brake Equipment Engineer.

We regret to record the death in New York on November 1, in his 78th year, of Mr. Robert L. Burnap, formerly Traffic Vice-President of Canadian National Railways and Executive Assistant for the Grand Trunk Western Railroad at Chicago, who retired in 1936. Mr. Burnap was born at Burlington, Vermont, and in 1894 joined the Central Vermont Railway at Ogdensburg. In 1905 he was appointed General Freight Agent at St. Alban's, Vermont. From 1908 to 1927 he served with the Grand Trunk Western Railroad at Chicago, where he became Freight Traffic Manager in 1920. He was made Assistant Freight Traffic Manager, Canadian National Railways, in 1927, and in 1930 became Vice-President in charge of Traffic for the system. In 1933 he was appointed Executive Assistant for the Grand Trunk Western Railroad.

Mr. H. P. Hira, who will be succeeding Mr. A. C. Chatterjee as General Manager of the Great Indian Peninsula Railway, when the latter proceeds on leave, preparatory to retirement, next January, was born on January 18, 1900. He was educated at the Sind College and St. Xavier's College, Bombay, and took his B.A. degree in Bombay in 1919. After a brief course of training on the Great Western Railway in England, he was appointed as a Probationary Assistant Traffic Manager on the G.I.P.R. in 1925. Mr. Hira subsequently had charge of various divisions of the Commercial Department, as Divisional Traffic Manager, Nagpur, Bombay and Jhansi, and was later appointed Goods Superintendent, Wadi Bandar. In April, 1943, he was made Deputy Traffic Manager, and he served as Deputy General Manager (Food Supplies) from July, 1944, to April, 1946. In June, 1947, he was appointed Chief Traffic Manager, the position he holds at present.

Mr. H. P. Hira

Appointed General Manager, Great Indian Peninsula Railway, as from next January

Mr. B. Hardy Smith, Assistant to Electrical Engineer (Power & Lighting), Eastern & North Eastern Regions, British Railways, who, as recorded in our November 4 issue, has retired, was born in 1884, and educated at Godwynehurst School, Dover, and at Dover College. After an apprenticeship with the Dover Electricity Supply Co. Ltd., he joined the Great Eastern Railway in 1905 as Charge Engineer at Liverpool Street, until 1914 holding positions in the Stratford district. At the outbreak of war he joined the Royal Naval Division (Engineers); he saw service in Egypt and took part in the first landing at Gallipoli. He transferred to the Royal Engineers in 1916, and in 1917 was appointed Captain and Adjutant, Fenny Stratford Signal Depot. Returning to the Great Eastern Railway in 1919, Mr. Hardy Smith was appointed Assistant to the Electrical Engineer, and in 1924 was made Chief Technical Assistant to the Electrical Engineer, L.N.E.R. He was appointed Assistant to Electrical Engineer (Power & Lighting) in 1934.

Mr. Roger Falk has been appointed the first Director-General of the British Export Trade Research Organisation. He is taking up his duties in the New Year, but is already engaged in a survey of the B.E.T.R.O. activities.

Air Vice-Marshal C. A. Bouchier has been appointed the Federation of British Industries representative for Japan. It is intended that he will make two visits a year, and he has just left on his first trip, which will last three or four months, investigating openings for British exports to Japan and reporting on post-war industrial development there.

Mr. G. H. Fletcher has been appointed General Manager of the Sheffield Works of Metropolitan-Vickers Electrical Co. Ltd.; he relinquishes his title of Chief Engineer & Manager, Sheffield Works. Mr. H. Newsam takes over the duties of Chief Engineer, Traction Motor Department; Mr. R. P. Knight is appointed Assistant Manager; and Mr. H. Taylor becomes Superintendent of the Works.

The late Mr. J. H. Thomas, for many years General Secretary of the National Union of Railwaymen, Member of Parliament for Derby from 1910 to 1936, and former Cabinet Minister, left £15,032.

We regret to record the death on November 20 of Mr. J. P. D. Coleman, lately a Director of Wild-Barfield Electric Furnaces Limited.

On account of illness, Mr. C. F. A. Dobson has resigned his appointment as Manager of the Conduit Department of the General Electric Co. Ltd., and on his return will take up a senior position in the sales organisation of the company. Mr. W. Lewis Smith, Manager of Pirelli-General Wire & Cable and Wiring Sundries Departments, takes over control of the Conduit Department, and will be responsible for the general management of the three departments. Mr. Lewis Smith will have three Deputy-Managers: Mr. R. E. Everard, Deputy-Manager of Pirelli-General Wire & Cable Department, Mr. J. L. Simpson, Deputy-Manager of Conduit Department, and Mr. W. G. Keer, Deputy-Manager of Wiring Sundries Department.

The late Mr. C. A. Roberts

Technical General Manager, Buenos Ayres Great Southern and Western Railways, 1935-36

The late Mr. C. L. Simpson

Divisional Locomotive Superintendent, Newport, G.W.R., and Western Region, 1945-49

Mr. R. H. A. Burrell

Appointed Assistant Chief of Police, Eastern Area, British Railways

We regret to record the death in Buenos Aires on November 3 of Mr. Cecil Arthur Roberts, who retired in 1936 from the position of Technical General Manager of the Buenos Ayres Great Southern and Buenos Ayres Western Railways. Mr. Roberts was born in Australia in 1880, and, after serving an apprenticeship with the Fairfield Shipbuilding & Engineering Co. Ltd. in Scotland, returned there in 1900, being employed for three years on locomotive construction at the Phœnix Foundry, Ballarat. He again left Australia, and became engaged on electrification work on Underground railways in London, and in 1906 joined the Buenos Ayres Western Railway as an Assistant Works Manager. He served with the R.F.A. in France, Belgium and Egypt during the 1914-18 war, and, after being wounded, was transferred to the Ministry of Munitions, subsequently returning to the B.A.W.R. He organised the new Sub-Department of Transport in 1922, and became Traffic Sub-Superintendent in 1926, and Traffic & Transport Manager in 1928. In 1930 he was appointed General Manager of the Buenos Ayres Western Railway, and in 1935 he became Technical General Manager of the Buenos Ayres Great Southern and Western Railways jointly.

Mr. W. Strath, of the central economic planning staff at the Treasury, has joined the Economic Planning Board in place of Mr. E. A. Hitchman. Mr. Hitchman has taken over the duties performed at the Treasury by Sir Leslie Rowan, who was recently appointed Economic Minister in Washington.

We regret to record the death on November 9 of Mr. C. L. Simpson, Divisional Locomotive Superintendent, Newport, Western Region, British Railways. Mr. Simpson, who was educated at Blundell's, joined the Great Western Railway in 1909 and was employed in the shops at Newport, Dock Street. He was transferred in 1911 to Swindon. In September, 1914, he enlisted in the Public Schools Battalion, Middlesex Regiment, and in 1915 received a commission in the Royal Engineers; he served in France with the 94th Field Company, R.E., 19th Division, and other units, and subsequently attained the rank of Captain. He returned to the G.W.R., and went to Bristol in 1920 as Inspector, in 1922 being appointed Assistant to the Divisional Locomotive Superintendent there. In 1933 he became Assistant to the Locomotive Running Superintendent & Outdoor Assistant to the Chief Mechanical Engineer at Swindon. Mr. Simpson was appointed Divisional Locomotive Superintendent, Bristol, in July, 1939, and Divisional Locomotive Superintendent, Newport, in February, 1945. The funeral took place at Newport Cemetery on November 14, when among those present, in addition to family mourners, were a number of officers of the Western Region, including:—

Messrs. H. H. Swift, South Wales Area Officer; W. N. Pellow, Locomotive Running Superintendent & Outdoor Assistant to Chief Mechanical Engineer, Swindon (also representing Mr. F. W. Hawksworth, Chief Mechanical Engineer); W. R. Stevens, Divisional Superintendent, Newport (also representing Mr. G. Matthews, Operating Superintendent); H. G. Kerry, Divisional Locomotive Superintendent, Paddington; H. N. S. Edwards, Divisional Locomotive Superintendent, Bristol; A. W. H. Christison, Divisional Locomotive Superintendent, Newton Abbot; L. G. Morris, Divisional Locomotive Superintendent, Worcester; S. E. Tyrwhitt, Divisional Locomotive Superintendent, Cardiff; S. Stevens, Divisional Engineer, Newport; N. D. Jenkins, District Goods Superintendent, Newport; D. M. Turnbull, Divisional Superintendent, Cardiff; C. E. Shaw, District Goods Manager, Cardiff; H. G. Lakeman, Divisional Engineer, Cardiff; J. F. M. Taylor, Divisional Superintendent, Swansea; R. G. Pole, Divisional Superintendent, Bristol; J. Colclough and H. R. Cox, Assistant Divisional Locomotive Superintendents, Newport.

Mr. R. H. A. Burrell, O.B.E., who, as recorded in our November 4 issue, has been appointed Assistant Chief of Police, Eastern Area, British Railways, was educated at Dulwich College, and passed into the Indian (Imperial) Police in 1925. During his 22 years' service in India he held a number of important posts. From 1940 to 1943 he was Commandant of the Eastern States Joint Police, and for a short period acted as Inspector-General and Police Adviser. Thereafter, until his retirement in 1947 as a result of the change in Government, he was Superintendent of the city and district of Jubbulpore in the Central Provinces, and for a period acted as Deputy Inspector-General. He returned to England, and was appointed Superintendent in the railway police towards the end of 1948. Mr. Burrell was awarded the Indian Police Medal for meritorious service in 1945, and was made an Officer of the Order of the British Empire in 1947.

Mr. C. G. E. Parrott has been appointed to the staff of the British Electrical & Allied Manufacturers' Association. During and since the war he has served with the Ministry of Supply, latterly with the Directorates of Power Station and of Signals Equipment.

Mr. V. M. Marshall, of C. M. Hill & Company, representing Société Anglo-Franco-Belge de Materiél de Chemins de fer, held a cocktail party on November 15 at l'Institut Belge, 6, Belgrave Square, S.W.1, to meet Monsieur Jean Gillieaux, of Société Anglo-Franco-Belge.

Mr. H. Osbourne Bennie is retiring from the position of Deputy-Chairman of the Scottish Machine Tool Corporation Limited as from December 31, and will be succeeded by Mr. Douglas Sharp. Mr. H. M. M. Hyslop has been appointed Assistant Managing Director of the Corporation, and relinquishes the position of Secretary, which has been filled by the appointment of Mr. G. C. Dempster, the present Chief Accountant. Mr. John S. Reynolds has been appointed a Director of the Scottish Machine Tool Corporation Limited.

Mr. R. J. Ellery, Secretary of the British Electric Traction Co. Ltd., is leaving early in the New Year for South Africa, where, for a time, he will participate in the direction and management of the Merchants Industrial Group of Companies, in which the B.E.T. is substantially interested. During Mr. Ellery's absence, Mr. G. H. Walsh, the company's Accountant, will be also Acting Secretary of B.E.T. Mr. A. W. Groocock, who is Assistant Secretary of the B.E.T. Federation Limited, has been appointed Assistant Secretary to the company.

Ministry of Transport Accident Report

Trowse, Norwich, Eastern Region, British Railways: February 3, 1949

Lt.-Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred at about 6.33 a.m. on February 3, 1949, at Trowse Station, Norwich, when the 6.25 a.m. passenger train, Norwich Thorpe to Ely, consisting of six bogie coaches drawn by B.I. class 4-6-0 engine No. 61044, was accidentally routed to the down, or wrong, line and after travelling about ¾ mile past three signal boxes collided head-on with the 2.55 a.m. freight train, Whitemoor to Norwich, standing opposite Trowse Yard box.

No passengers were hurt but the drivers of both engines and the fireman and guard of the freight train sustained minor injuries. The nature and extent of the resultant damage suggested that the speed on collision was 15 to 20 m.p.h. Prompt medical assistance was given to those injured. Through communication was restored by 11.54 a.m.

Dawn was just breaking. It was a clear morning, with slight mist by the river, and it was freezing hard.

The accompanying diagram shows the lines, signals, etc., essential to an understanding of the case. The position of the passenger train, before leaving No. 1 platform at the Thorpe Station, is shown dotted.

The Layout

At the time of the accident the whole area between Thorpe Junction and Trowse was reasonably well illuminated by high candle-power lamps in adjacent streets and external lighting on the nearby power station.

The points at the exit to platform 1 are wide to gauge, 26/48, each of which forms one end of a crossover, both being bolted for outward movements by locking bar 46. Normally, trains leave *via* crossovers 48 and 52 reversed, under signal 40. Movement from siding F to the platform is controlled by 27 signal, which detects the up end of 26 crossover. It is possible to set this crossover for the siding, bolt it for an outward movement by reversing 46 and then clear 27 for an inward movement. This is done when an engine joins a train of such length that it will stop on bar 46. An outgoing movement then is routed through siding F to the up line *via* crossovers 92 and 109, under signals 23, 96 and 123. Crossover 92 has no locking bar for outward movements but is detected by signal 96.

The interlocking does not allow a similar procedure when backing an engine from the down main to platform 1 when fully occupied, nor consequently the lowering of signal 40.

The section of route involved is operated by Sykes lock-and-block (former G.E.R. pattern) and the up line is track circuited between the Junction and Swing Bridge boxes, with indicators in the latter. Both lines are so fitted between the Swing Bridge and Trowse Yard boxes.

Evidence

A train for Cromer, without engine, was already in the platform and an extra vehicle on the Ely train made it impossible to attach an engine without fouling the points. The train, in such circumstances, would ordinarily be started through siding F, as explained.

The signalman at the Passenger Yard box intended to do this, but could not send the engine from siding F as, for some reason unknown to him, he was unable to reverse points 26. He therefore sent the engine to the down main and reversed crossover 48 for it to come back, but, as above stated, this did not permit of 48 being bolted ready for an outgoing movement. He said that it was possible, however, in daylight only sometimes to replace 47 quickly and reverse 46 while the engine was between those bars. (Colonel McMullen was informed that in the past bars had been damaged by signalmen attempting this.) At about 6.20 the train was offered to and accepted by Thorpe Junction and the advanced starting lever 42 reversed. This operates a slot on the junction home signals, as shown on the diagram. "Train entering section" was sent at 6.25 a.m. and the junction signalman then got the train accepted and cleared his signals; this caused the right-hand arm on the bracket post to go to "clear."

The Passenger Yard signalman, unable to bolt points 48 and hence to clear signal 40, decided to go and see that the points were set correctly and authorise the driver to pass the signal at danger, also to ascertain what prevented reversal of 26 points. Unforunately, he forgot to reverse crossover 52.

He verified the setting of points 48 and told the driver he could start as soon as he received the guard's permission, found and rectified the minor defect holding points 26, and returned to the box. While he was doing so, the train passed him but he failed to notice that it did not travel through crossover 52. Arriving at the box, he noticed that the Sykes backlock on signal 42 had not been released by actuation of the treadle ahead of it and realised that the train must have taken the wrong road. Going to the telephone, he heard the junction signalman already talking about the occurrence.

The guard said a coupling defect caused a late start of five min. Neither he nor the station inspector realised that the engine had been backed from the down main. They could not see the platform starting signals because of steam and were unaware that the train started against them. He noticed, however, when giving the right-away signal, that signal 42 had been cleared. He began to sort parcels and did not notice the fact that his train was on the wrong line.

The driver knew the road thoroughly. He realised that signal 40 could not be cleared for him and expected a hand signal from the box to pass it at danger, as this was the procedure previously adopted. He saw No. 42 was off and, having received the signalman's message and the guard's signal, he started. He did not notice that his engine did not travel *via* crossover 52 nor that it burst junction points 24. The steam heating had not been turned on before the train left and the fireman opened the steam cock between the box and Carrow Road bridge; steam leaked into the cab, which was full by the time that bridge was reached.

He crossed the cab—his engine had left-hand drive—and after conversation with the fireman, had the cock turned off just before the swing bridge. There was no other talking or other undue distraction of attention on the footplate.

He observed the junction and swing bridge signals, but, because of the steam, did not notice that their position in relation to the engine differed from the normal, nor that the signal boxes were further away than usual. He did not observe that he was on the wrong road on the swing bridge,

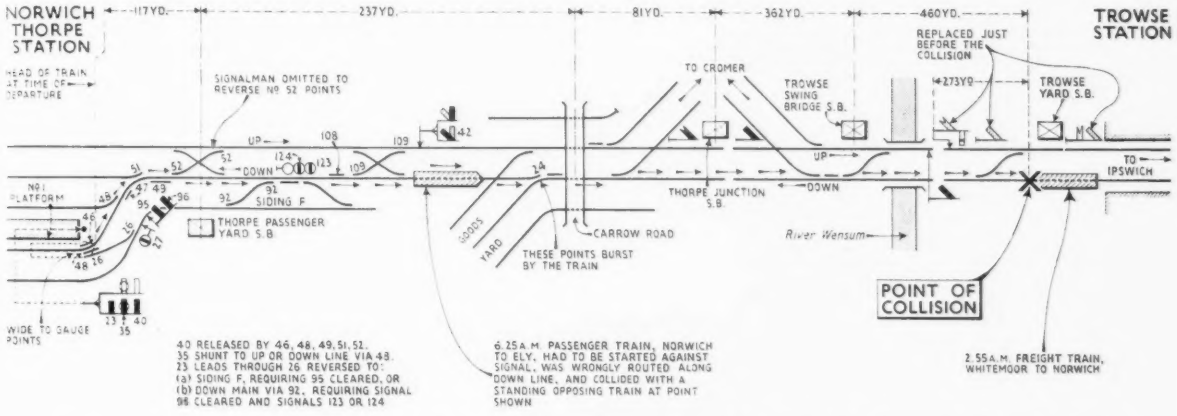

NORWICH THORPE STATION
TROWSE STATION
117YD.
237YD.
81YD.
362YD.
460YD.
273YD.
HEAD OF TRAIN AT TIME OF DEPARTURE
SIGNALMAN OMITTED TO REVERSE NO. 52 POINTS
REPLACED JUST BEFORE THE COLLISION
TO CROMER
TROWSE SWING BRIDGE S.B.
TROWSE YARD S.B.
UP
DOWN
TO IPSWICH
No. 1 PLATFORM
SIDING F
THORPE PASSENGER YARD S.B.
THORPE JUNCTION S.B.
GOODS YARD
CARROW ROAD
River Wensum
THESE POINTS BURST BY THE TRAIN
POINT OF COLLISION
WIDE TO GAUGE POINTS
40 RELEASED BY 46, 48, 49, 51, 52.
35 SHUNT TO UP OR DOWN LINE VIA 48.
23 LEADS THROUGH 26 REVERSED TO:
(a) SIDING F, REQUIRING 95 CLEARED, OR
(b) DOWN MAIN VIA 92, REQUIRING SIGNAL 96 CLEARED AND SIGNALS 123 OR 124
6.25 A.M. PASSENGER TRAIN, NORWICH TO ELY, HAD TO BE STARTED AGAINST SIGNAL, WAS WRONGLY ROUTED ALONG DOWN LINE, AND COLLIDED WITH A STANDING OPPOSING TRAIN AT POINT SHOWN
2.55 A.M. FREIGHT TRAIN, WHITEMOOR TO NORWICH

Diagram illustrating circumstances of collision at Trowse Station, Norwich, Eastern Region, on February 3, 1949

due to steam and haze. He was looking through the spectacle glass, which in that class of engine gave a particularly good view. On passing through the bridge the position of Trowse Yard distant, which he had seen to be off for him, appeared unusual, and, putting his head out of the cab, he realised he was on the wrong road. He closed the regulator and applied the brake, but the collision occurred. He did not hear his fireman shout or see the other train.

The fireman, about four years at Norwich, said when steam started to escape he realised he had forgotten to open the valve on the tender, so he shut the steam heating cock before they reached the overbridge. There was still some steam in the cab when they passed over the swing bridge. He did not realise that the Swing Bridge box starting signal was closer than usual nor that the engine was unusually near to the right-hand girder of the bridge, although on reflection he agreed that they appeared so. Seeing headlights on the same line at 10 to 12 yards, he shouted "hold tight."

A driver, riding on the right hand to learn the road, which he had already signed for from the terminus to Trowse, generally corroborated the regular driver's evidence. He did not notice that the relative position of the Swing Bridge box signals was unusual. The regular driver opened the regulator after the bridge and then suddenly shut it. At that moment he heard the fireman shout. He did not see the brake applied nor the headlights of the other train.

The freight train driver said he was standing opposite Trowse Yard box to pick up a pilot. After a short conversation with the signalman he heard his fireman shout that a train was approaching them. He could do nothing. The fireman thought from the steam that the other engine was under full power, but when questioned said it might have come from the vacuum exhaust and not the cylinders.

The signalman at Thorpe Junction, hearing a noise and seeing lever 24 move slightly, took a lamp to see what was wrong, as he realised something must have run through the points. He emerged from the box as the rear of the passenger train passed but took no particlar notice of it. His mind, he said, had been taken off that train and he did not observe its tail lamp; he could only think that something had run past the down running line shunt signal. He found nothing amiss and on returning saw his block instrument had not been released. He then realised that the train must have been on the wrong road and going to the telephone heard the Swing Bridge and Trowse Yard signalmen in conversation about it.

The signalman at Swing Bridge had cleared his signals in readiness, and, seeing the train approach, thought it was on the wrong road, and he went to the door to confirm. When he saw this was so he tried to work the detonator placer for the down line but was unable to pull the stirrup until the train had passed. He sent "vehicles running away" and the signalman at Trowse Yard quickly replaced all his signals. The latter said the train must have passed the up distant, however, and the chance of the driver having seen the home replaced was remote.

Inspecting Officer's Conclusion

The signalman failed to set the road correctly and must be held primarily responsible. As he knew he could not bolt the points or clear the signals, care was all the more necessary. He could attribute his omission only to his concern about the failure of points 26, but an experienced signalman—he had been one for 40 years and had an excellent record—ought not to have been distracted by such an occurrence. He acted appropriately in verifying the setting of the points and was clearly actuated by desire to avoid delay and a wish to rectify the defect at points 26, in which he was successful. It was unfortunate that he did not advise the platform staff of his intentions.

The junction signalman's desire to ascertain what was wrong with the junction points was natural, but should not have been allowed to deflect his attention from the train. Had he watched it more closely and observed the tail lamp he might have realised it was on the wrong line, connected the two incidents without leaving the box and then sent forward an emergency signal in time to have the train stopped.

The signalman at Swing Bridge was quick to notice that the train was on the wrong line but failed to apply detonators in time. No doubt in his haste he omitted to disengage the notch holding the stirrup of the detonator placer, which was in good order.

The driver should have realised that he did not go through crossover 52, but it is understandable that he did not notice bursting the junction points, or that he was on the wrong line at the overbridge, where there are four tracks. He should have seen, however, that the relative positions of the boxes, signals, etc., and particularly the girders of the swing bridge, were not the same as usual. He seems to have been more distracted by the escape of steam than an experienced driver should have been. A test suggested that its effects may have been somewhat exaggerated. If the driver, as he said, realised the situation when near Trowse Yard distant signal he could have stopped the train in time. It appears more probable that he failed to appreciate that there was anything wrong until just before the actual impact. He had been driving since 1937, with a clear record.

The fireman must share responsibility to some extent and the guard cannot be considered entirely free. He was required by rule to keep a good look-out on leaving a station. He is an experienced man with a clear record.

Remarks and Recommendations

The inward movement of the engine over the main line to the fully-occupied platform line resulted in the fouling of the exit points and the departure of the train on the authority of a verbal message. This was evidently not the first occasion on which it had happened and it is clearly undesirable.

Arrangements have been made to alter the interlocking so that outward movements in similar circumstances will in future be appropriately signalled. If it is also necessary to retain the facility of using siding F as a route for departing passenger trains, it should be properly equipped as a passenger line.

The accident almost certainly would have been prevented had the signalman at Swing Bridge box brought the detonator placing apparatus into operation; his failure to do so was due, it seems, to incorrect manipulation.

The apparatus is provided essentially for use in emergencies such as this and should be capable of being operated instantaneously and without particular thought. A slight modification which will overcome the difficulty experienced in this case has been approved.

Report of E.C.E. Inland Transport Committee

The report of the third session of the Sub-Committee on Inland Transport of the Economic Commission for Europe, recently concluded at the Palais Des Nations, at Geneva, has now been issued. The discussions and recommendations covered a wide range of subjects, notably problems associated with the restitution of wagons, renewal of rolling stock, standardisation, and safety.

It was noted with satisfaction that on September 30 last no less than 856,000 wagons, or 74 per cent., had been identified in the countries co-operating in the work, in addition to 72 per cent. of the passenger coaches. For the Western Zones of Germany, and also Belgium and France, it was expected that the work would be completed by the end of the year. Similar progress was expected in Italy and Czechoslovakia. It was decided to extend the field of operations to include locomotives, loco-tractors, motor engines, and railcars.

A resolution noted that it appeared arithmetically possible to carry out partial restitution by exchange of identified property. On completion of this process, there would be a balance of German wagons making it possible to carry out the decision of June, 1949, which stipulates that account must be taken, "in determining the number of wagons to be sent back from each country, of the portion of the wagon park composed of German-type wagons . . . to be allocated to systems which now operate lines previously part of the pre-war German system." The United Kingdom and U.S.A. did not associate themselves with this resolution.

The International Union of Railways notified the Sub-Committee that it would make a preliminary report in the near future on such questions as the interchangeability of spare parts for wagons and standardisation of common types of wagons. The I.R.U. was requested to make a study of modernisation of international trains directed towards the replacement of seats by sleeping accommodation, the possible standardisation of supplements, the lowest possible rates being charged for third class travel, and the improvement of amenities for day travellers, particularly third class. In this connection, Governments were recommended to urge their railway administrations to improve lighting and sanitary installations on international trains.

The participant countries represented at the session included Austria, Belgium, Czechoslovakia, Denmark, France, Italy, Jugoslavia, Luxembourg, Netherlands, Norway, Poland, Sweden, Switzerland, the United Kingdom, and the U.S.A. The session lasted from October 13-19.

Williams & Williams Stand at the Building Trades Exhibition.—The Internation Building Trades Exhibition, which is being held at Olympia, London, until December 1, includes a display by Williams & Williams Limited in the form of a two-storey steel structure. The upper floor is entirely enclosed with glazing made by this firm, and demonstrates different methods of mechanical window opening, as well as types of handrails, office screens, lantern and pavement lights, and so on. The lower floor contains different types of windows and doors, glazing, etc., while the main stairway embodies a bronze handrail exhibit.

Public Transport Association Luncheon

The annual luncheon of the Public Transport Association Incorporated was held at the Savoy Hotel, London, on November 17.

Mr. Alfred Barnes, Minister of Transport, proposing the toast of "The Public Transport Association," said this was one of the first luncheons held by the Association. He took the opportunity to say how much the passing of personalities like Lord Ashfield and Sir Frederick Heaton was to be regretted: they had been transport minded in the broadest sense, for they had realised that road transport was only part of the transport system of the country.

Road transport had by no means reached the limit of its possibilities, but the potentialities of other forms of transport should never be overlooked in the transport industry. From 1938 to 1949 the number of public service vehicles had increased from 49,500 to 69,000, or 40 per cent.; in the last three years the annual increase had averaged between 5,000 and 6,000.

Sir Joseph Nall, in response, said many of those present would remember that by origin and early training he was railway minded and throughout his associations with road haulage and road passenger transport, he had endeavoured to preserve a reasonable balance between road and rail. He still believed in the great potential of the railways as part of the essential transport system, but was convinced that if they were to play an essential positive part in the inter-urban section of mass transportation, they must adopt a more vigorous policy of "mend and make do." There simply was not time, or money, for grandiose and wholly uneconomic schemes of placing main-lines underground.

Questions in Parliament

Carriage of Explosives by Rail

Mr. R. Sargood (Bermondsey West—Lab.) on October 24 asked the Minister of Transport what bye-laws he had sanctioned requiring the Railway Executive to give prior information to the Fire Brigade of any goods trucks containing explosives in transit by rail in the County of London area; and whether he was satisfied that adequate precautions were being taken to avoid possible explosions and fires.

Mr. Alfred Barnes in a written answer stated: So far, none, Sir. I am informed by the British Transport Commission that the existing instructions to railway staff require that adequate precautions should be taken to avoid possible explosions and fires. The Home Secretary has, however, consulted me on the subject and it is now being discussed.

Railway Accidents

Sir Patrick Hannon (Birmingham, Moseley—C.) on October 24 asked the Minister of Transport if he would make a statement on the number of railway accidents which have taken place during the years 1947, 1948 and during the six months ended June 30, 1949, indicating in general terms the causes of such accidents, and the number of deaths and serious injuries incurred.

Mr. Alfred Barnes: The information for the years 1947 and 1948 is contained in the report of the Chief Inspecting Officer of Railways for the year 1948, a copy of which I am sending to Sir Patrick Hannon. It is not practicable to prepare such detailed statistics, as are contained in this report, for a six-monthly period only, but I will circulate particulars of train accidents which took place during the six months ended June 30, 1949.

Later Mr. Barnes circulated the following particulars:—

Train Accidents

Total Number		554
	Killed	Seriously injured
Passengers	—	6
Servants	3	7
Other persons	1	3
	4	16
Causes		
Human element		
Train crews		118
Signalmen		157
Technical defects		159
Other causes		120
		554

Capital Expenditure on Railway Works

Captain L. D. Gammans (Hornsey—C.) on November 14, asked the Minister of Transport if he would make a statement on the extent to which cuts in capital expenditure had deferred work on the electrification of lines by the British Transport Commission.

Mr. Alfred Barnes stated in a written answer: The application of the recent capital cuts to railway works is now being worked out.

Redundant Railway Workers

Mr. Thomas Reid (Swindon—Lab.) on November 15 asked the Minister of Labour what steps he had taken to provide employment for the 25,000 employees of the railways discharged due to the reduction in railway staffs by 25,000 since the railways had been nationalised.

Mr. George Isaacs (Minister of Labour) stated in a written answer: The normal placing machinery of the employment exchange service has been used for railway workers who have registered for work as a result of redundancy. The number registering has been small, and in general there has been no difficulty in placing them in other employment.

Construction and Maintenance of Locomotives

Mr. Thomas Reid (Swindon—Lab.) on November 14 asked the Minister how much steel and other materials he had allocated for the construction and maintenance of locomotives on British Railways.

Mr. Alfred Barnes: It is not the practice to give details of allocations for particular purposes.

Mr. Reid: Is the Minister supplying iron and steel and other materials necessary to maintain the 400 types of locomotives built at Swindon and other railway works which he took over when the railways were nationalised? Is he continuing all these types?

Mr. Barnes: No. As the result of nationalisation, these 400 types will be reduced to quite a small number.

Mr. James Harrison (Nottingham East—Lab.): If the Minister cannot give details of the allocations of steel, can he say whether there will be any reduction in the allocations for the construction of locomotives next year?

Col. A. Gomme-Duncan (Perth—C.): In view of the large number of main-line locomotives completely out of action because they require steel parts, will the Minister give the matter his urgent attention, because the railway service is liable to break down if this trouble continues?

Mr. Barnes: There are not a great number of locomotives out of action. Since nationalisation there has been a considerable improvement in the figure for locomotives under repair, because of the better use of locomotives for the purpose of hauling stock.

Col. Gomme-Duncan: Perhaps the Minister will extend his inquiries to Scotland, where I have received entirely different information.

Mr. Barnes: I understand that there is great satisfaction in Scotland now that the railways have been nationalised.

Mr. David Renton (Huntingdon—Lib. Nat.): Will the Minister take steps, in consultation with his Cabinet colleagues, to ensure that the price which the railways have to pay for iron and steel does not rise in future?

Mr. Barnes did not reply.

Train Crews

Mr. K. W. M. Pickthorn (Cambridge University—C.) on November 7 asked the Minister of Transport if he would state the numbers of trainmen who had left trains on running lines in each of the 12-month periods ended, respectively, on January 31, 1947, 1948 and 1949, in a form comparable with the figures given on February 11, 1946, for the 12 months ended January 31, 1946.

Mr. L. J. Callaghan (Parliamentary Secretary, Ministry of Transport): This information is not now available in the Ministry of Transport as the matter is a day-to-day responsibility of the British Transport Commission.

Mr. Pickthorn: Does that mean that, although looking after this matter may be a day-to-day responsibility, the general upshot of it is generally regarded as outside the proper purview of the Minister?

Mr. Callaghan: Day-to-day matters are delegated by the Act to the Railway Executive.

Mr. Pickthorn: Is the Parliamentary Secretary denying that questions of public safety depend on this, and are not matters of public safety the responsibility of the Minister?

Mr. Callaghan: There have been no allegations made, so far as I know, that public safety is not being observed.

London Road and Rail Plan

Mr. C. Challen (Hampstead—C.) on October 24 asked the Minister of Transport whether he could give an assurance that steps would now be taken to produce a fully co-ordinated road and rail plan for London, so that when the economic situation permitted such money as was available might be divided over each category in order to ensure the best overall arrangements.

Sir Wavell Wakefield (St. Marylebone—C.) asked the Minister of Transport: (1) whether, since the British Transport Commission had now reported that the scheme of its London Plan Working Party for the expenditure of £340,000,000 on the further improvement of rail transport in the London area was not economically justifiable from the transport angle and must be financed from sources other than its own, he could give an assurance that before any final decision was taken he would arrange for a comprehensive and impartial examination of the London transport problem as a whole, including transport by road as well as by rail; and (2) how many planning authorities were involved in the preparation of an adequate road system for the London area; and by what date he expected those plans would be sufficiently developed for him to form a definite estimate of the cost involved and to see what action was necessary to co-ordinate the proposals with

those of the London Plan Working Party of the British Transport Commission.

Mr. Alfred Barnes: As I have already informed the House, the Government has fully in mind the need for co-ordination of rail and road plans for London, and no proposal for a major change in either road or rail facilities is considered without taking alternative forms of transport fully into account. A comprehensive road and rail plan should emerge from the preparation and approval of development plans for the Greater London area by the ten planning authorities concerned. Co-ordination of the road and rail aspects will take place as a continuing process in the preparation of these plans. It will be several years before the development plans are sufficiently firm to enable a definite estimate to be made of the capital expenditure.

Sir Wavell Wakefield: Can the Minister expedite this plan, because there is a considerable hold-up taking place in development projects and buildings of all kinds due to the delay? It would greatly help matters if this plan could be accelerated.

Mr. Barnes: I should certainly like to do so, but, as Sir Wavell Wakefield is aware, until the other planning authorities —the local authorities—are able to complete their plans, it is very difficult for me to form any definite estimate or to give any direct guidance.

Roads and Bridges Economy Programme

Mr. Philips Price (Forest of Dean—Lab.) on November 1 asked the Minister of Transport if he could state what were the main ingredients of the £1,250,000 economy programme of his department so far as roads and bridges were concerned.

Mr. Alfred Barnes, in a written answer, stated: The saving of £1,250,000 results mainly from reduced expenditure on the restoration of war damage to roads, including the removal of defence works, and from the deferment of schemes for freeing roads, bridges and ferries from tolls.

Channel Tunnel Project

Mr. A. L. Symonds (Cambridge—Lab.) on November 14 asked the Minister of Transport when it was proposed to make a further examination of the project for a Channel tunnel.

Mr. Alfred Barnes in a written answer, stated: No useful purpose would be served by such an examination. The development of air travel and of train-ferry services has probably made a Channel tunnel less useful than it might once have been. In any event, it is likely to be many years before it would be possible to contemplate the expenditure of the necessary resources in men, materials and money on the construction of such a tunnel.

Clyde Steamer Service

Mrs. Jean Mann (Coatbridge—Lab.) on November 14 asked the Minister of Transport if he was aware of the withdrawal of cargo steamers from calling at Clyde piers; and if he would make a statement.

Mr. Alfred Barnes in a written answer, stated: Yes, Sir. The Clyde & Campbeltown Shipping Company notified me that it would be unable to continue its services after September 30, and I had no alternative in the circumstances but to ask the British Transport Commission to provide services which would be integrated with those which the Commission already run in the Clyde area. The Commission has done this, and, although some reduction has been made in the steamer services in the Clyde, I see no reason to doubt that the shipping and road services now being operated by it will meet all essential needs. I am in any case satisfied that the revised rationalised service should be given a trial, but I am sure that the Commission will continue to give careful consideration to all representations from local interests for it will wish to ensure that the position is adequately covered.

Reports on Engineering Standardisation

Mr. A. Albu (Edmonton—Lab.) on October 31 asked the Minister of Supply whether he had received the final report of the committee set up to investigate standardisation in the engineering industry; and whether it was his intention to publish it.

Mr. B. T. Parkin (Stroud—Lab.) asked the Minister of Supply if the committee he had set up under the Chairmanship of Sir Ernest Lemon to investigate standardisation in the engineering industry had completed its work; and whether he would make a statement.

Mr. George Strauss (Minister of Supply): Sir Ernest Lemon's committee has now completed its investigations and sent me a final report, which includes the substance of two interim reports. This final report will be published tomorrow. It reviews the problems of standardisation, simplification and specialisation in engineering goods and makes a number of recommendations. I should like to take this opportunity of expressing my thanks to Sir Ernest Lemon and his colleagues for their comprehensive and valuable report. The report brings out that, while some parts of the industry have made considerable progress in reducing unnecessary variety in production, this is by no means universally so. Certain recommendations about the British Standards Institution are made, which have already been acted on. The Institution is strengthening itself to deal with the increased work likely to fall to it, and the President of the Board of Trade, as he announced in the House on June 23, 1949, has appointed a committee to consider its organisation.

The main recommendations in the report deal with the action which not only manufacturing, but also using, industries should take to reduce unnecessary variety in engineering production. I earnestly hope they will be carefully studied by every section of the industry. Where the recommendations affect socialised industries, Government departments and other public bodies, they have already been drawn to the attention of the authorities concerned. They are being considered by my own department in relation to its extensive purchasing activities. The United Kingdom side of the Anglo-American Council on Productivity has recently concluded an inquiry into the extent to which concentration on a limited range of manufacture has assisted production in America. Its report, which deals with industry in general, is also being published tomorrow. Its conclusions are very much in line with those reached by Sir Ernest Lemon's committee, and the United Kingdom side of the council will, I understand, be taking steps to follow up its recommendations with industry. The simultaneous publication of these two reports will, I hope, stimulate interest in this important aspect of our production problem. The adoption and application of these principles must, however, rest primarily on industry itself, and I urge all those in positions of responsibility to apply themselves energetically to the task. I have no doubt that this can have a significant effect in lowering the production costs of British engineering goods.

Mauritius Government Railways

Mr. John Rankin (Glasgow, Tradeston —Lab.) on October 26 asked the Secretary of State for the Colonies what action was being taken on the recommendations of the Economic Commission of 1947-48 to modernise the railway in Mauritius in view of the falling revenue.

Mr. A. Creech Jones (Secretary of State for the Colonies): I assume Mr. Rankin refers to the Commission's recommendation that experiments should be carried out in the use of diesel-electric locomotives and light diesel passenger cars. The General Manager of the Mauritius Government Railways is shortly to discuss with the Crown Agents for the Colonies the advisability of ordering the diesel-electric locomotives. The possibility of using light diesel cars is under consideration, but I understand that investigations so far raise doubts as to whether these cars would effect economies.

Mr. Rankin: Can the Secretary of State say what steps are being taken to prevent the unemployment situation in Mauritius deteriorating still further as a result of the railway falling into disuse?

Mr. Creech Jones: There is no danger of the railway falling into disuse. The question of unemployment does not arise on this question.

Payment for Use of Persian Railways

Col. O. E. Crosthwaite-Eyre (New Forest & Christchurch—C.) on November 10 asked the Chancellor of the Exchequer (1) on what grounds His Majesty's Government had paid the Persian Government £7,500,000 for the wartime use of railways in Persia; and (2) what proportion of the £7,500,000 now to be paid to Persia would be transferable or convertible sterling; and what portion in gold or hard currency.

Mr. Douglas Jay (Economic Secretary to the Treasury) stated in a written answer: His Majesty's Government has paid to the Persian Government a sum of £8,206,676. The figure originally agreed was £5,700,000, but was subsequently written up. The sum represented the balance due to the Persian railways on account of British military traffic carried during the war up to June 30, 1945, the total charges for which were of the order of £19 million. When the railway settlement was under discussion with the Persian Government in 1946 it was agreed that the sum subsequently determined to be payable to the Persian Government should be settled in accordance with the financial arrangements then in force between Persia and ourselves. This implied payment of 60 per cent. in gold and the remainder in sterling to the account of the Persian Government, which bore a revaluation guarantee.

The Persian Government has agreed to postpone the exercise of its right to obtain this 60 per cent. in gold, provided that it will be available to it in case of need. Payment of the sum of £5·7 million agreed with the Persian Government has therefore been made in sterling and the amount written up to £8·2 million in accordance with the revaluation guarantee. Persian sterling is transferable to other transferable account countries and also to American account in payment for essential supplies not obtainable for sterling on equivalent terms.

Staff & Labour Matters

T.U.C. Wages Policy

The T.U.C. special economic committee last week called on all unions with outstanding wage claims to postpone negotiations until the General Council had made a full statement. The Confederation of Shipbuilding & Engineering Unions at York on November 16 decided to reject the appeal and continue with its claim for a £1 a week increase. A resolution, that action on the claim should be deferred until the final recommendations of the T.U.C. had been fully considered by the executives of the 37 unions affiliated to the Confederation, was defeated.

Mr. Gavin Martin, Secretary of the Confederation, said after the meeting that consideration had been given to action to avoid inflation, protect standards of living, and maintain full employment; the profits in the industry were more than enough to meet the claim, and the action taken was not, therefore, at variance with the T.U.C. economic committee's policy as agreed with the Government.

The Iron & Steel Trades Confederation has decided to recommend the various sections of the industry to stabilise for 12 months their cost of living sliding-scale agreements on condition that other unions with such agreements take similar action and that a halt is called to any new general wage demands in other industries. The decision is likely to influence the other unions with sliding-scale agreements. There have been no further N.U.R. developments since the N.U.R. put forward its claim on behalf of the lower-paid railwaymen.

On November 20, Mr. Arthur Deakin, General Secretary, Transport & General Workers' Union, said that the report of the T.U.C. special economic committee finally drafted on November 21 for submission to the General Council on November 23, would cause surprise, in that the rigorous restraint asked for was not for a limited period, but for one which would enable the country to make an economic recovery.

A conference of executives of unions affiliated to the T.U.C. was to be called in January to consider the recommendations of the General Council. The machinery of negotiation built up so laboriously over the past 30 years must be maintained. It would be stupid to allow anything to interfere with this. They did not want the Government to come in and were not asking it to. The trade unions with the representatives of management, nationalised or private, were more likely to find the answers to the problems. The standard of living of some of the lower-paid workers had to be dealt with. They could not accept the rates at present operating in some industries. There were industries governed by general wages councils where wages ranged between 79s. 6d. and 90s.; in that range there must remain the opportunity for discussion and improvement.

Regarding the national minimum wage, Mr. Deakin said that there were difficulties concerning the so-called unskilled worker, the semi-skilled, and the craftsman. There was danger of destroying incentives and compensation for added responsibility. A minimum rate tended to become the maximum standard. He did not agree that this was a wage-freezing policy. On the basis of present productivity, wages and salaries generally should not be increased; but if productivity increased, there was nothing to prevent wage increases being given. In fact, they should be given by way of compensation and payment for the increased productivity.

The T.U.C. General Council met on November 23 and approved the special economic committee's report on wage increases, which will now be circulated to the affiliated unions.

Joint Consultation between Management and Staff

It has been the policy of the Railway Executive to establish the closest co-operation with staff and unions in all matters affecting the welfare of railways and staff. To this end, and in conformity with the lines of development laid down in Part VII, Section 95(b) of the Transport Act, 1947, the Railway Executive formulated the procedure of consultation described in *The Railway Gazette*, June 24 issue.

Unlike the A.S.L.E. & F. and R.C.A., the N.U.R. at first declined to be associated with the scheme on the ground that it embraces certain matters which the N.U.R. claims to be within the scope of the negotiating machinery, and that "consultation" without right of decision with the management was a useless procedure. The N.U.R. has, however, recently intimated its acceptance of the consultation procedure. In the N.U.R. official publication, *The Railway Review*, November 18 issue, Mr. James Harrison, M.P., says the recent agreement "extends such consultation far beyond anything dreamed of a few years ago. The recent agreement marks the beginning of a new era of industrial relationships in the railway world. The opportunity is there to operate one of the most fruitful principles contained in the general idea of nationalisation, the principle of creating conditions in which the worker is something more than a cog in the machine; to render it possible for the worker to become a responsible unit, helping to make the decisions that he is expected later to carry out."

This change of front on the part of the N.U.R. will go far to ensure the success of the new consultation procedure, which is an infant born out of the negotiating machinery which has been a feature of British railways for so many years.

The level at which consultation between the parties should take place and examples of the subjects regarded as eligible are as follow:—

(i) *At station, depot or yard level (i.e., corresponding to Local Departmental Committee level)*: Staffing arrangements and establishment; station construction in relation to traffic handled; track and signalling lay-out; station equipment, cranes, stores, etc.; cartage plant—type and number of vehicles; relations with public, traders and other forms of transport; and passenger and freight train working at a particular station, depot or yard.

(ii) *At District, Departmental, or Regional level (i.e., corresponding to Sectional Council level)*: Staffing arrangements and establishment, where more than one station, depot or yard is involved; introduction of new methods of working, or alterations to existing methods, which are general to a Region, department or district; design of locomotives, passenger and freight rolling stock, with particular reference to the efficient performance of duties and conditions under which performed; planning of passenger and freight timetables covering districts or sections of the line; punctuality and timekeeping of passenger and freight train services; introduction of new apparatus intended to be general or standard in its application; and development or closing of lines, stations, depots or yards.

(iii) *At Railway Executive or Regional Headquarters (i.e., corresponding to the level of the Railways Staff Conference or discussion between Regional staff officers and headquarters of railway trade unions)*: Matters of high policy not appropriate to consultation at levels (i) and (ii); these would be matters involving British Railways as a whole and of very great importance to the Railway Executive and the staff.

This list of examples is not exhaustive and there is a general desire that consultations should be on as wide a scale as possible. The scheme for consultation differs from the machinery of negotiation, in that, whilst the levels of local departmental committees, sectional councils, and so on, have been taken as a guide in formulating the procedure, it is not intended that there shall be reference from one level to another.

The Railway Executive feels that it is of the utmost importance that consultation should be constructive and not destructive. It is made clear that consultation does not recognise vetoing a proposal, but the staff should know that its views are welcomed, and will be seriously considered and, if of assistance, adopted.

Mechanical Handling Demonstration

A demonstration of Conveyancer fork-lift trucks in conjunction with palletisation was staged on November 10 by Electro-Hydraulics Limited, Warrington, in conjunction with the Admiralty, at the Admiralty victualling stores at Risley, Lancashire, in the presence of representatives of various Ministries, the Services, the Post Office, British Railways, and of shipping, haulage, warehousing, and industrial interests. During the day, some 600 tons of mixed goods were loaded into railway box wagons by a variety of methods, and records showed considerable saving in man-hours. Despatch of the stores was normal routine.

At one time, seven Conveyancer trucks were in use, bringing palletised loads from stacks, and loading them direct into railway wagons. In some cases, hand-operated pallet trucks were used inside wagons, while in others the latest type of Conveyancer, Mark VIII, brought pallet loads straight from the stack into the box wagon and manœuvred loads into position without manual aid. In one operation, 360 cases of provisions were loaded by manual labour and roller conveyor with nine men, which took 18 minutes, or 162 man-minutes. The same job performed by Conveyancer and two men took only 42 man-minutes. In another operation, one Conveyancer and two men moved 19,200 lb. of sugar in 50-lb. bags from a stack and loaded it into a wagon in 26 minutes.

Mr. E. K. Whittingham, Chairman of the Modernisation Sub-Committee of the Goods & Parcels Terminals Committee of British Railways, said that the Railway Executive was anxious to provide its customers with what they needed. Steps now being taken included construction of experimental box wagons with doors 8 ft. 6 in. wide.

Mr. L. Rumley, Sales Director of Electro-Hydraulics Limited, said that the palletisation system of stacking and the use of fork-lift trucks were equally efficient in other branches of transportation and inside the factory itself as a direct aid to productivity.

Notes and News

North Thames Gas Board.—An engineer is required, with experience in maintenance of railway permanent way and sidings, for the Beckton Gas Works, East Ham, E.6. See Official Notices on page 631.

Hunslet Locomotives for the Cameroons.—The Hunslet Engine Co. Ltd., Leeds, has received an order for four 0-4-2T locomotives with 9 in. by 15 in. cylinders for heavy plantation haulage in the Cameroons.

Technical Sales Representative Required.—A technical sales representative is required for service in the Midlands and North by manufacturers of locomotive and carriage specialities. See Official Notices on page 631.

London Transport Dramatic Club.—The London Transport Dramatic Club are presenting three performances of Noel Coward's "Blithe Spirit" at the Fortune Theatre, Drury Lane, London, W.C.2, on December 1, 2 and 3. The performances will commence at 7 p.m. on each evening.

Liverpool Street Parcels Hold-Up.—The cartage staff at Liverpool Street Station, who had refused to handle inter-station parcels traffic on the bulk checking system, as recorded in our news pages last week, resumed normal working on the afternoon of November 16, to allow of discussion between British Railways, Eastern Region, and the N.U.R.

Superintendent of Works Required.—The Sudan Railways require a superintendent of works, between 26 and 36 years of age, for service in the Sudan. The duties consist of the supervision of building construction and maintenance, including brickwork, reinforced concrete for houses, offices, warehouses, and all kinds of railway buildings. See Official Notices on page 631.

Mr. J. H. Brebner in Denmark.—Following his successful paper at the Silver Jubilee Convention of the Swedish Advertisers' Association, on November 16, Mr. J. H. Brebner, Chief Public Relations & Publicity Officer to the British Transport Commission, was invited to address the Copenhagen Advertising Association at a luncheon given for him on November 22. The luncheon was attended by the British Ambassador to Denmark and the subject of Mr. Brebner's address was "The Expanding Function of Public Relations and Publicity in Industry and Commerce." Editorial reference to Mr. Brebner's paper in Stockholm, which was on advertising and public relations, appeared in our November 18 issue.

Institution of Railway Signal Engineers.—At a meeting of the Institution of Railway Signal Engineers, to be held at the Institution of Electrical Engineers, Victoria Embankment, London, W.C.2, at 6 p.m. on December 9, Mr. W. Owen will read a paper on "Speed Control Signalling for Close Headway Working."

Accident at Liverpool, Lime Street.—An engine drawing empty stock to form the 7.50 a.m. train from Liverpool, Lime Street, to Birmingham, came into violent contact with the buffer stops of No. 6 platform and the four leading coaches left the rails. A Ministry of Transport enquiry will be opened by Brigadier C. A. Langley, Inspecting Officer of Railways, Ministry of Transport, at Liverpool, Lime Street Station, on November 28.

G.W.R. Dramatic Society.—The Great Western Railway (London) Dramatic Society last week presented a short season of Esther McCracken's comedy "Quiet Week-End" at the Fortune Theatre, London, W.C.2. The production, which was under the direction of Mr. Percy Grumbridge, was skilfully handled; the cast of thirteen made a most competent job of the play, and provided an excellent evening's entertainment. Before the rise of the curtain on the last performance, a presentation was made to Percy Grumbridge, the producer, to mark the celebration of his 50th production of the plays presented by the Society.

Booking Facilities at London Termini.—As from December 1, tickets and reservations for journeys in this country from any London terminus, will be obtainable at any other London terminus, irrespective of the Region in which the journey is to be made. This means that a passenger from Kings Cross to Edinburgh, for example, will be able to purchase his ticket in advance and reserve his seat, or sleeping berth, at Waterloo or Paddington, if more convenient to him. The new arrangement will apply at:—Kings Cross; Waterloo; Liverpool Street; Victoria; Marylebone; London Bridge; Fenchurch Street; Holborn Viaduct; Broad Street; Charing Cross; St. Pancras; Cannon Street; Paddington; Blackfriars. Tickets for all Regions will also be obtainable at Euston, but seat and sleeping car reservations for other Regions will not be issued there at present. The following classes of tickets will be issued: ordinary; monthly return; furlough; bulk travel; Service duty; zone (dogs, bicycles, perambulators, and so on); sleeping car reservation; seat reservation; Pullman car supplement.

Prospects of Denationalising the Road Haulage Industry.—During a visit to Manchester in connection with the last of a series of meetings of divisional liaison committees, on November 10, Mr. R. Morton Mitchell, Chief Executive Officer, Road Haulage Association, described as "nonsense" any suggestion that it would be impossible to denationalise the road haulage industry. There were adequate methods of doing so, that would satisfy the Government concerned as well as the hauliers still in the industry and the large number of people who had been pushed out and were anxious to run their own haulage businesses again.

Twenty-Five Beyer-Garratt Locomotives for New South Wales.—The Department of Railways, New South Wales, has ordered 25 Beyer-Garratt locomotives from Beyer, Peacock & Co. Ltd. These engines, of 60,000 lb. tractive effort and with a 4-8-4 + 4-8-4 wheel arrangement, will rank among the most powerful locomotives yet placed in service in Australia. Their total weight in working order will be about 250 tons, and the large grate, of about 64 sq. ft., will be fired by a mechanical stoker. With an axleload in the vicinity of 16 tons these locomotives will have very wide application. It is understood that the contract represents over £1,000,000 sterling.

Attracting "Middle Income" Americans to Britain.—Mr. John G. Bridges, Director-General of the Travel Association (Tourist Division of the British Tourist & Holidays Board), who has recently returned from a six weeks' tour of North America, said at a press conference in London on November 21 that the thousands of middle-income Americans were a great untapped market for travel to Britain. Their full value would be felt when this country could offer a "$500 fortnight," including return air fare. To cater for more American visitors, there would have to be more modern hotels at moderate prices. In 1949, 138,000 Americans came here as tourists, and spent $70,000,000. Next year the estimate is 170,000 tourists, spending $75,000,000.

Head, Wrightson & Co. Ltd.—In the statement issued with the report and accounts of Head, Wrightson & Co. Ltd., whose results were given in our September 16 issue, and whose annual general meeting was held on October 25, the Chairman, Sir T. Guy Wrightson, remarked that all their subsidiary companies had been well employed, their newer activities especially showing considerable progress. Their long-term policy was to develop the supply of heavy capital equipment. Their engineering and consulting divisions for oil, coal, iron, and steel

Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, British Transport Commission, with Mr. Tage Erlander, Prime Minister of Sweden, and Major K. G. Bussler, Swedish General Manager, Anglo-Iranian Oil Co. Ltd., at the Swedish Advertisers' Association Silver Jubilee Convention in Stockholm

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

A PROFESSIONAL Institute for Executives in local Railway and Transport service (Administrative and Technical—Fellows (F.Inst.Ex.O.—F.Inst.Ex.E.) and Associates (A.Inst.Ex.O.—A.Inst.Ex.E.)). Particulars regarding admission and membership on request from The Secretary, 241, Bristol Road, Birmingham, 5.

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. Price 2*s.* 6*d.* Post free 2*s.* 8*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2*s.* Post free 2*s.* 3*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Sudan Government

THE Sudan Railways require a Superintendent of Works, aged 26 to 36, for service in the Sudan. The duties consist of the supervision of building construction and maintenance, including brickwork, reinforced concrete, etc., for houses, offices, warehouses, and all kinds of railway buildings. Candidates should preferably have served an apprenticeship to one of the building trades and/or have had technical school training. They must have had experience for at least two years, in a supervisory capacity on building works. A knowledge of harbour and marine work would be an advantage. Appointment will be on long-term contract for a period of nine years on a salary scale £E.396 to £E.780 with special post-service gratuity. A cost-of-living allowance varying between £E.180 and £E.390 per annum according to the number of dependants is at present payable, and, subject to certain limitations, an outfit allowance of £E.40 is payable on appointment. There is at present no income tax in the Sudan. Free passage on appointment. Full particulars and application form may be obtained on application to: Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelopes "Works Superintendent Railways."

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s.* By post 2*s.* 2*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

TECHNICAL SALES REPRESENTATIVE required for service in Midlands and North by manufacturers of Locomotive & Carriage Specialities. Salary according to qualifications, which could with advantage include experience of Locomotive and Carriage design and/or construction. Apply in writing stating age and giving details of previous experience to: Box 534, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

NORTH THAMES GAS BOARD.—Engineer wanted with experience in maintenance of railway permanent way and sidings, for the Beckton Gas Works, East Ham, E.6. Minimum starting salary £560 per annum, according to age and qualifications. Pension arrangements will be discussed with short list candidates. Applications stating age, experience and qualifications should be addressed to the STAFF CONTROLLER, NORTH THAMES GAS BOARD, 30, Kensington Church Street, London, W.8, to reach him not later than December 5, 1949.

THE RAILWAY HANDBOOK provides the railway student with a collection of useful statistics and information relating to the railways of Great Britain and Ireland. In addition, in matters of international interest, such as speed and electrification progress, the book extends its scope to cover the whole world in order to present a complete picture of these increasingly-important developments. 120 pp. Dy. 8vo. Paper covers Price 5*s.* By post 5*s.* 3*d.* *The Railway Gazette*, 33, Tothill Street, London, S.W.1

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other metals took care of these activi- The connections resulting from this were of great benefit to the depart- which supplied alloy and other steel castings. During the year they put into operation the first aluminium-alloy bascule bridge in the world at Sunderland (which was described in *The Railway Gazette* October 28 issue). Subsequently they absorbed a small group of companies making the lighter aluminium-alloy structures. Head, Wrightson Processes Limited, their subsidiary engaged in oil refinery work, had continued its expansion. At a subsequent extraordinary general meeting resolutions were passed approving the proposed issue of bonus shares in the proportion of one new ordinary share for every four held.

Institution of Transport, Metropolitan Section.—Mr. Evan Evans, formerly Operating Manager (Railways), London Transport, will read a paper on "The Railway (London) Plan" to the Institute of Transport, Metropolitan Section, on December 5. The meeting will be held at Livingstone House, Broadway, London, S.W.1, at 5.30 for 6 p.m.

Transfer of Docks.—The undermentioned docks of the British Transport Commission will be transferred to the Docks & Inland Waterways Executive from the Railway Executive on the dates shown:—Garston and Fleetwood, December 1, 1949; Barrow, Silloth, Lydney, Grangemouth, Ayr, Troon, Methil, Burntisland, Alloa, Alloa (South), Bo'ness, Charlestown, Pettycur, and Tayport, January 1, 1950.

Reunion of 151 and 152 (G.W.) Railway Construction Companies, R.E. (S.R.).—On November 12, the second post-war reunion of members of the former 151 and 152 (G.W.) Railway Construction Companies, Royal Engineers, Supplementary Reserve, was held at Cardiff. The 140 members present, when they were serving in the units, were employed by the former Great Western Railway, and included among them were Lt.-Colonel E. C. Cookson, Assistant Engineer (Permanent Way), Western Region, who was commanding 152 Company in 1939, and Lt.-Colonel R. H. Edwards, Civil Engineer, South Wales Docks (East), Docks & Inland Waterways Executive, who was O.C. 151 Company, 1936-40. Other former officers of the units present were: Colonel S. Stevens, Divisional Engineer, Newport (W.R.), Lt.-Colonel E. J. M. Matheson, Assistant District Engineer, Sheffield (E.R.), Major C. W. Edwards, now O.C. 151 Railway Maintenance Squadron, R.E.S.R., Shrewsbury, and Major R. F. J. Smeardon, Assistant Civil Engineer, Barry Docks. The arrangements were made by Mr. Ivor Smart, who is now the Squadron Sergeant Major, 151 Squadron.

Double-Deck Train.—As a result of further wheel trouble, the Southern Region double-deck electric train was withdrawn from service on November 22. This is the second time the train, which was described in our November 4 issue, has been taken out of service.

London Midland Region Commercial Classes.—Mr. A. E. Hammett, Commercial Superintendent, London Midland Region, recently met the 20 prizewinners of the L.M.R. commercial classes and congratulated each of them on their achievement. Altogether 2,083 L.M.R. railwaymen attended last season's evening commercial classes arranged by the Region to assist staff to further their railway commercial knowledge.

Collision near Heighington.—When, near Heighington, a workmen's passenger train ran into 12 wagons that had become detached from a mineral train between Shildon and Darlington, British Railways, North Eastern Region, on November 16, several of the wagons were smashed, and a stone bridge carrying a minor road was demolished by the mineral train guard's van, which was catapulted into the air. Six persons, including the driver and fireman of the passenger train, received only slight injuries, and the passengers, after receiving medical attention for shock and bruises, were taken home by ambulance.

Belfast Harbour Proposals.—Important new proposals for the extension and improvement of Belfast Harbour, estimated to cost from £4,000,000 to £5,000,000, are contained in a Bill to be promoted by the Harbour Commissioners next year. The period prescribed for the completion of the extensions is 20 years and the work will be carried out in sections. At the same time the Board is seeking powers to raise by 50 per cent. its rates and charges on goods and livestock of every description and for the use of the graving dock. Power is also sought to recover from shipowners a levy of 1*s.* for every passenger embarked or disembarked at the port. In each case the figure quoted is the maximum.

North-Eastern Region Boxing Success. On November 16, at York, boxers of the North Eastern Region of British Railways beat the Army Northern Command by seven bouts to five.

New Middle East Railway Link.—It is reported from Cairo that a railway to link Persia, Iraq, Syria, and the Lebanon is under discussion by representatives of the Governments of these countries, with the object of giving Persia access to the Mediterranean, possibly at Beirut or Latakia.

Guest, Keen & Nettlefolds Limited.—The directors announce that a new subsidiary is to be incorporated under the title of Guest, Keen & Nettlefolds (Cwmbran), for the purpose of acquiring from Guest, Keen & Nettlefolds (South Wales) the works and plant (other than rolling mills) at Cwmbran, Newport, Mon. The consent of the Ministry of Supply has been obtained.

George Cohen, Sons & Co. Ltd, at the Building Trades Exhibition.—The exhibits of George Cohen, Sons & Co. Ltd., of Hammersmith, London, W., in the Grand Hall Annexe of the International Building Trades Exhibition, which is open at Olympia, London, until December 1, cover a wide range of tools and equipment, lifting and handling equipment, mobile cranes, power trucks, and woodworking machinery. They include the Hoistmaster electric hoist; the Jones diesel-driven KL 44 and KL 15 mobile cranes; the "600" 5/3½ cu. ft. concrete mixer; the Douglas High-Lift power truck; and the Metalclad 24-in. bandsaw and combined planing and thicknessing machine.

British Railways London Commercial Service Dinner.—One hundred members of the London Commercial Service held their second annual dinner on November 18. The Chairman, Mr. W. H. Vine, Chief London Commercial Representative, referred to the successful results of the first full year of British Railways sales effort in the London area. No less than 40,000 telephonic enquiries had been dealt with and 3,000 personal calls were being made

weekly to help traders in their transport problems. He referred to the spirit of co-operation between the organisation and the officers and agents providing the service. Mr. A. E. Marriott, City Manager, Eastern Region, responded. Among those present were Messrs. F. H. Marshall, London District Freight Superintendent, Southern Region; L. J. Moorcock, London District Passenger Manager, Eastern Region; P. Nunn, Divisional Superintendent, London East, Southern Region; and N. S. Taylor, Railway Executive.

Forthcoming Meetings

November 25 (*Fri.*).—Institution of Railway Signal Engineers, at the London Transport Executive Signal School, Earls Court Station, London, S.W.5, at 6.15 p.m. "Track Circuits," by Mr. W. H. Challis.

November 26 (*Sat.*).—Railway Students' Association, London School of Economics & Political Science. Visit to railway police school, "St. Cross," Tadworth, Surrey.

November 26 (*Sat.*).—Irish Railway Record Society, annual dinner.

November 29 (*Tue.*).—Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, at 5.30 p.m. "Remedial Measures for the Improvement of Railway Track Formations," by Messrs. A. H. Toms and W. F. Beatty.

November 29 (*Tue.*).—British Railways, Southern Region, Lecture & Debating Society, at the Hither Green Railwaymen's Club, at 5.45 p.m. "The Possibility of Developing a Railway System to Check the Growth of London," by Mr. R. B. Hounsfield.

November 30 (*Wed.*).—Railway Students' Association, and Institute of Transport, Metropolitan Graduate & Student Society, at the London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6.30 p.m. Debate: "That the continuance of long distance road passenger services is unjustified, having regard to the present economic conditions."

November 30 (*Wed.*).—Institute of Welding, at the Institution of Civil Engineers, Great George Street, London, S.W.1, at 6 p.m. The Sir William J. Larke Medal Paper.

December 1 (*Thu.*).—Railway Students' Association. Visit to Charlton tram & trolleybus repair depot, at 2.30 p.m.

December 1 (*Thu.*).—British Railways, Western Region, London Lecture & Debating Society, at the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "The use and transport of radio isotopes produced at the atomic energy research establishment," by Dr. Henry Seligman.

December 1 (*Thu.*).—Institute of Metals, Leeds Metallurgical Society, in the Chemistry Department, the University, Leeds 2, at 7 p.m. "Corrosion Fatigue," by Dr. A. J. Gould.

December 1 (*Thu.*).—Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. "The Medical & Psychological Aspects of Electric Shock, and Some of the Nervous Complications," by Dr. Macdonald Critchley.

December 2 (*Fri.*).—Scottish Society of Students of the Locomotive, at the Boardroom, Regional Offices, 302, Buchanan Street, Glasgow, C.2, at 7.30 p.m. "Locomotive Superheating," by Mr. M. Smith.

Railway Stock Market

Markets have been firmer, and British Funds have maintained their recent gains quite well, although the tendency is now to await the result of the £10,000,000 South Africa loan. The prevailing view is that until the General Election the aim of the Government is to prevent long-dated British Funds from going to a higher yield basis than 4 per cent. This may give greater stability to markets generally, and already leading industrial shares have rallied moderately, although best levels touched have not been fully held. The statement by Sir Stafford Cripps on economic and financial affairs, and his reassuring views on the position of sterling, have helped to some extent. There has been better demand for shares of the big exporting industries, notably textiles and motors, while iron and steels further improved now that the nationalisation vesting date has been changed to January 1, 1951, at the earliest. Cable & Wireless stock has been an uncertain market pending the meeting called to consider the capital plan.

There was only moderate interest in foreign rail stocks, but good features were not entirely lacking. Canadian Pacifics were outstanding with an advance to 27⅛ following attention drawn to the possibility of appreciation in value of land and other interests. The preference stock improved to 62½ and the debentures to 93. Apart from firmness in Brazil Rail gold bonds at 43¼, Brazil rails have remained uncertain, although movements were smaller than a week ago. The recent fall in Leopoldina debenture stocks attracted a little buying. On the other hand, both the ordinary and preference stocks remained uncertain, awaiting the share-out scheme for the various stocks. It is assumed that the latter is likely to show either that the ordinary stock is undervalued and the preference overvalued, or that a higher price is justified for the preference. The latter is changing hands around 27 and the ordinary stock at 9. Leopoldina 4 per cent. and 6½ per cent. debentures were 88 and 128½ respectively and Leopoldina Terminal 5 per cent. debentures strengthened to 99½. Great Western of Brazil have been steady at 135s. 7½d. In other directions Antofagasta strengthened to 7½ and the preference stock to 41. Peru Corporation issues were better on the latest traffic return which reflects the higher tariffs now in force. The ordinary stock firmed up to 25s., the preference was 4¼ and the debentures a point higher at 37.

There was again a considerable business in United of Havana stocks awaiting news of the outcome of the take-over negotiations. The 1906 debentures, after their recent fall, rallied to 27¼ at one time, but later eased to 26½. Paraguay Central 6 per cent. debentures have marked 40 and the "D" income stock around 4¼. Taltal shares changed hands at 15s. 3d. and Nitrate Rails were 75s. San Paulo 10s. units have been steadier at 14s. 7½d. Manila "A" debentures were 85 and the preference shares 7s. 6d. National Railways of Mexico 4½ per cent. bonds eased to 19¼ and Mexican Railway 6 per cent. debentures were 42½.

There was only moderate business in road transport shares. B.E.T. deferred stock has been steadier around £1,480, but Southdown eased to 121s. 3d., and West Riding to 68s. Lancashire Transport were 78s. 9d.

Iron and steel shares were again better now that the nationalisation vesting date has been changed and the General Election will be left to determine whether nationalisation is to be carried out. Dorman Long, which were also helped by the big increase in profits (as much as £1,000,000 is placed to reserve) moved up further to 31s. 6d., while United Steel were 28s., Colvilles 35s. 1½d., Firth Brown 70s. 7½d., and Stewarts and Lloyds 53s. Guest Keen were 40s. 3d. and Vickers improved to 27s. Rise in iron and steel shares is due to the view that if there is no nationalisation the market prices of the shares will tend to be valued more on the value of assets and the strength of the balance sheet. Incidentally, despite their improvement, iron and steel shares are still well below their valuations fixed for the exchange into British Steel stock in the event of nationalisation.

Shares of locomotive builders and engineers have improved, sentiment being helped by the general trend on the Stock Exchange. Vulcan Foundry rose sharply to 19s. 6d., North British Locomotive were 19s. 4½d., and Beyer Peacock 19s. 3d., while Wagon Repairs 5s. shares improved to 16s. 9d. Charles Roberts changed hands around £6⅝.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1947/48	No. of week	Aggregate traffics to date: Total 1948/49	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta... ...	811	13.11.49	£ 79,460	+ £ 26,400	45	£ 3,031,470	+ £ 529,230
	Costa Rica	281	Sept., 1949	30,929	— 3,154	13	102,621	— 8,998
	Dorada	70	Oct., 1949	31,848	— 908	43	296,878	+ 23,637
	Inter. Ctl. Amer. ...	794	Aug., 1949	$1,023,467	+ $26,568	35	$8,601,268	— $568,351
	La Guaira	22¾	Oct., 1949	$91,504	— $18,157	43	$1,058,982	+ $10,465
	Nitrate	382	15.11.49	18,459	+ 5,161	46	403,291	+ 131,997
	Paraguay Cent. ...	274	11.11.49	₲138,210	+ ₲39,856	19	₲2,735,822	+ ₲820,541
	Peru Corp. ...	1,059	Aug., 1949	246,670	+ 74,521	9	473,214	+ 122,033
	Salvador	100	Aug., 1949	c81,000	+ c 1,000	9	c173,000	+ c8,000
	Taltal	154	Oct., 1949	15,870	+ 7,900	18	45,070	+ 13,340
	United of Havana ...	1,301	11.6.49	$231,311	+ $14,746	49	$13,733,928	— $4,659,951
Canada	Canadian National †	23,473	Sept., 1949	14,914,000	+ 299,666	39	121,848,000	+ 3,665,333
	Canadian Pacific †...	17,037	Sept., 1949	10,784,666	— 548,333	39	89,239,000	+ 4,043,333
Various	Barsi Light* ...	167	Sept., 1949	23,640	+ 3,285	25	179,107	+ 24,015
	Egyptian Delta ...	607	30.9.49	18,220	— 991	26	326,967	— 1,764
	Gold Coast ...	536	Sept., 1949	205,654	+ 39,977	27	1,398,009	+ 213,885
	Mid. of W. Australia	277	Sept., 1949	31,775	+ 2,186	13	81,475	— 771
	Nigeria	1,900	Aug., 1949	445,009	+ 41,464	21	2,218,110	+ 12,405
	South Africa ...	13,347	29.10.49	1,479,345	+ 90,134	30	44,969,796	+ 4,642,933
	Victoria	4,744	July, 1949	987,736	— 320,973	4	—	—

* Receipts are calculated @ 1s. 6d. to the rupee † Calculated at $3 to £1